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The Need for Mental Hygiene in the Education of the Blind

C. B. Minner, Ph.D.

As a distinct development in this country the mental hygiene movement is now thirty years old. It arose, as a shift of emphasis, out of the science of psychiatry and the study of the abnormal mind. It now consists of an attitude or point of view definitely justified, and of a body of fairly well organized principles and procedures firmly established. The movement rests its claim for general recognition and whole-hearted support not upon theoretical and logical grounds alone, but chiefly upon the results it has achieved in psychological clinics and guidance centers throughout the country. Particular mention should be made of the work done in this respect in Detroit, Minneapolis and St. Paul, and of the Conference on Guidance which has just finished its session in Minneapolis. Results of such service need not be reviewed here. To any one interested they are easily accessible. The lack of general interest in them, and not their availability, is the chief problem in this connection.

It has always seemed strange and unjustifiable to me that educators of the blind have not been the first instead of almost the last to apply the principles and practices of mental hygiene in the processes of education. For with but a little reflection it becomes obvious that mental hygiene may render a service particularly useful in spheres of restricted and specialized education simply because this service is more definitely needed in such places. For some reason this consideration seems largely overlooked. The ordinary public schools of the country to a rapidly widening extent are taking advantage of the means for increased effectiveness and broader service placed at their disposal by mental hygiene. This is evidenced in many ways; but chiefly by the fact that the newest and most promising developments in public education arise from this source—the recognition of the very great importance of mental hygiene.

But the schools for the blind, where, as we shall see, mental hygiene is drastically needed and may render a service of supreme importance, have done little or nothing in this direction, taking them as a whole. To be sure, there are some fine advocates of the point of view of mental hygiene writing in this field. Cutsforth, Merry, French, Muhl, Miss Elizabeth Brooks and others come to mind in this regard. But their good advice has not been taken seriously and put into practice. A few of the older and larger schools for the blind have gone some distance in the right direction. But even in these schools the general problem has not yet been faced as squarely as I am convinced it must be faced. And in some of the schools, to my definite knowledge, the conditions in this respect are but little short of disgraceful. The criticisms which I shall offer do not apply equally, of course, to all schools for the blind. Some authorities see the problems and are taking steps toward solving them. And there is at least the possibility that the criticisms here offered do not apply so fully to schools located in the larger centers where there are more opportunities and therefore greater incentives to avoid the dangers which I shall indicate. But they may apply even in these places unless definite and adequate steps are taken to avoid the conditions which they represent. However, if they apply only to one school—and I know they do apply to that extent at least—and if their publication goes any distance toward lessening their applicability even there, the reward definitely will be worth the effort here involved. The constructive part of the paper, the insistence

upon the value of mental hygiene in education, special or general, is always *apropos;* for although the practice of mental hygiene may be overdone if it be pursued too seriously, when wisely applied, its importance cannot be overemphasized.

Almost from the very beginning of the movement to educate the blind, those interested in such education have been warned against the disadvantages and the dangers of segregation. We nod our heads in seemingly appreciative acquiescence at such warnings and then promptly forget them. It is obvious to all of us that as things are we cannot wipe out the necessity to gather blind children together into one place for the purpose of educating them. And so we accept the necessity and do little or nothing to guard against the possible dangers attending it. Too often we apparently regard the disadvantages themselves as necessary evils which must be endured if there is to be any education of the blind. This is obviously a false view of the matter. Evils of this sort are always subject to elimination if the right wise methods be practiced against them. It has become so trite that its significance is overlooked in far too many instances, to say that there are numerous ways of minimizing the dangers involved in segregation. But the fact must be reiterated over and over again until all of us do our utmost not only to follow out some or all of these ways but even to change the very meaning itself of the word "segregation." Only thus can we free ourselves in this respect from the guilt of sacrificing through our negligence the personalities and characters of living human beings entrusted to our care. Only then shall we have done what now lies before us to be done.

And what are these dangers and the possible ways of avoiding them? They are known to all of us, and were known to us long before mental hygiene became a distinct movement. But apparently we have failed to recognize their seriousness. Mental hygiene insists that something be *done* about the matter. But what have we done in this connection? What have we done toward making it possible for the blind person to feel and act in accordance with the conclusion that he is normal in every respect except for the lack of one of the senses? Obviously not enough, since the blind person who achieves this point of view and can act in accordance with it is the exception and not the rule. Do we insist upon a right understanding of the use of "blindness" as a means of classification? Do we allow such considerations as the inevitable presence of abnormality among the blind and the possibility that this may increase and not decrease, to color unduly our attitudes and policies? I know that in some cases we do. Do we follow every avenue or any avenue open to us to make our schools integral parts of the communities in which they are located? We may follow some, but we do not follow enough of them. Do we do everything we can to make our pupils feel at home in the community as they feel at home in the school? Obviously we do not. Our excuses are ready enough; and they may seem cogent and conclusive to us. But they are not worth a snap of the fingers toward justifying or excusing our shortcomings in the respects indicated. We say we cannot run the risks involved in inviting the children of the community in to visit the children in our school. We must, if that is what it takes to minimize the dangers of segregation. We say that we cannot allow our pupils to lose themselves in the community. We cannot have parents and patrons and other interested (or we may express it "curious") persons overrunning the institution at all times, eating up its provisions, interrupting the routine and interfering with the studious tranquillity of our pupils. We cannot disrupt our school year by allowing easy vacations and that sort of thing. Now, of course, there is some truth in some of the positions thus expressed. But we cannot allow that fact to justify the extremes to which some schools have gone in acting upon them. We simply must manage to do the things which in any degree will minimize the curse of segregation. We are deal-

ing with human clay in its most plastic form. Our responsibility is tremendous. How well do we meet it?

The problems of segregation constitute only a part of the larger set of problems which may be designated by the term "isolationism"—the practice of restricted social contacts. This is another old friend of educators of the blind; but the color of his eyes and the sound of his voice many have forgotten. Time and time again I have heard persons newly making acquaintance with work in a school for the blind remark on the meagerness of the social intercourse made possible for the pupils. And always I have heard them hushed up, and have seen nothing done about it. I have been forced of late to live in full and constant view of the ugly head of this beast, isolationism; but all of my feeble efforts to drive it away have been thwarted and have come to naught. I have heard its presence justified in many ways, all of them foolish and shortsighted: Nine months the children are here for work; the summer is the time for social contacts and the discovery of friends. Dances and parties, and picnics away from the institution, make the pupils restless and take their minds off their studies. Pupils have all the opportunities they need for social intercourse on the playground and in their societies and clubs. Social intercourse out in the community is dangerous—it may run into disease; the children may get hurt; it may reflect discredit on the institution; it may result in the formation of undesirable companionships. These are actual arguments used; they are not fictitious. And how obviously absurd and brutal they are! They refute themselves. To be sure, the risks they disclose are real enough. But educators of the blind must face those risks, grapple with them, avoid them as best they can in any way other than to run away from them, if they are to develop the personalities of the pupils placed under their care. This is the insistent demand both of mental hygiene and of common sense. Tragedy stalks the failure to heed the demand. How much such tragedy there is, he who runs may read.

Each of the false positions formulated in the preceding paragraph invites extensive denunciation. But I must here decline the invitation except to make a few remarks concerning a point of view and a line of practice which arise out of the position that pupils are put in school only to *study*. The theory is that blind persons are introspective; and the practice is, therefore, to keep their little noses to the grindstone in order to avoid the dangers of this introspection. Now it is probably true that the mere condition of blindness tends to develop the attitude of introspection. But the word need not be uttered in a whisper of apprehensive awe, as I have heard it uttered. There is nothing criminal in introspection as such. And its practice need not lead to undesirable consequences unless the experience upon which it plays is forced to become woefully warped and pitifully restricted. Indeed, those who know what they are talking about point to the increased exercise of introspection as one of the compensating advantages of blindness. It goes without saying that the benefits of this possible compensation cannot be achieved by following the practice of filling every minute of the pupil's time for nine months of the year with tasks which he is ordered and compelled to do under watchful and often mistrusting supervision. If he is to develop freedom and aggression, man must be free and must be allowed to assert his organically inherent aggressiveness when it shows itself. If you exercise a minute censorship over his mail, his telephone calls, his visitors, his visiting, and his formation of friendships and companionships; if you refuse to let him speak his mind and act out his interests; if you force him to meet every detail of a system minutely regulated and arbitrarily set up; there is no individual, and much less a blind person already laboring under a tremendous handicap in this respect, who will come out with a wholesome personality.

Another set of problems which has come

in for its share of controversial discussion, but about which very little has been done in the way of applying the point of view of mental hygiene, centers around the practice of completely segregating the sexes in schools for the blind. Both enlightened thought and good common sense have always frowned upon the practice, for they have seen the weakness of the argument brought in its support. And today mental hygiene repudiates the practice with a definiteness and an authority which cannot be overlooked. Wise and enlightened guidance, of course, there must be in this matter, in schools for the blind as well as elsewhere. But if we begin by taking the position that blind children are to be treated and educated as normal individuals, then there is no reason for a more careful isolation of the sexes among the blind than there is among those who see. I venture to say that no school for the blind as yet fully recognizes and acts wholly upon the logic of this position. I am aware that some educators of the blind are beginning to take a more reasonable attitude in this matter. But I know from personal acquaintance that the conditions in some schools for the blind are utterly deplorable in this respect.

Now, there is no need for a long argument in this connection. The facts are out in the open on every hand. Everybody knows that unless there is adequate recognition and proper guidance of the natural and biologically grounded sex interests, only the direst consequences may be expected. And with but the slightest observation anyone may convince himself that such recognition and guidance in schools for the blind, and perhaps elsewhere as well, are not the rule, but only the exception. Everybody knows, too, that willful and arbitrary restrictions in this regard are but little short of a mild form of sadism itself. An undue concern, with its attendant winking gossip, over personal interests and social contacts among pupils and teachers, the assumption of the attitude of the watchful spy toward every step of pupil and teacher, the mistrust of every touch of the hand, and the admission and support of such attitudes as awe, a false aloofness, and the fear of contamination, are obviously in the wrong direction. But the absolute avoidance of such misconceptions is only the beginning. There must be spread throughout all phases of the life of the individual a natural and normal attitude toward the matters of sex. This means explicit sex education, a frank facing of the facts; but it means above everything else natural and healthy social contacts among the sexes. Only in such an atmosphere can the development of personality be natural and normal. Here again there may be risks to be run in facing these problems squarely; but they are risks which educators of the blind cannot shun and still remain educators. And furthermore, the harm which results when the other line is taken is not a risk, but a certainty.

There are many other sets of problems constituting the business of the education of the blind in the face of which actual practice shows an inexcusable lack of concern for the fundamental principles of mental hygiene. There are problems concerning the proper curriculum for a school for the blind; problems of discipline; problems of life in a cottage or dormitory; problems of recreational reading and other extra-curricular activities; problems of the proper adjustment of and regard for authority; problems of the proper relations towards parents, patrons, guardians, and the homes from which pupils come; problems of the proper attitude toward the limitations and possibilities of blind persons; problems of vocational guidance; problems of after-care or follow-up work; problems involving the adjustment of the individual in the face of so much that is done for him; problems connected with pensions and relief; and a hundred other sets. These, space will not permit me to discuss.

There is, however, a question more fundamental than any of these, which must not be overlooked in the discussion of the application of mental hygiene in the education of the blind. It is the question of *direct* influence

of blindness itself upon the development of personality. Nowhere, so far as I know, has this problem been dealt with specifically and adequately. It is not a problem to be solved from the armchair. It must be turned over to psychology for an adequate treatment. And thus I can offer here only the most general considerations concerning it. I hope to be able to discuss the problem more adequately in another paper.

Now, the most fundamental point to be made in connection with the question under consideration is this: In so far as personality is a function of experience, and experience is derived through the senses, the loss or lack of one of the senses under certain limitations may be supposed to carry with it certain effects in the matter of personality development. If we may imagine the senses of a given individual at or near birth eliminated one by one, there is one I suppose who would deny that after the elimination of three or four of the most important senses the individual deprived of them would be very limited in his potentialities for the development of a normal personality. Of course, it may be argued that it is possible to compensate for the senses lost by intensive education through the senses which remain. And it will be pointed out that ample evidence is at hand to justify the point when only one or two senses are impaired. But against this line of argument I think we must ask this question: Is the compensation after all full and complete even in the matter of the acquisition of personality traits? And I think we shall have to answer the question in the negative. Now, this answer, of course, is not the same as to deny that a blind person or a deaf person or even a blind and deaf person can develop what must be acknowledged to be a normal and adequately adjusted personality. It is to say simply that a person deprived of the usefulness of some of the sensory apparatus through which important aspects of the world must be apprehended, may be expected to evidence that deprivation through the possession or development of certain more or less definite personality traits and the absence of certain other such traits. What these traits and limitations are, and what should be done about them, although these are questions of fundamental importance in the education of the blind, are still questions which have not been answered in any degree of adequacy. I believe, however, that this will be found to be true: The more significant, the more determinative, effects of blindness in this respect must be sought among the indirect and not among the direct influences of blindness upon personality development. Some of these indirect influences I have indicated above.

Much I have left unsaid: I have not even mentioned two topics of very great significance, namely, the importance of mental hygiene in the life of the pre-school child, and the importance of knowledge of mental hygiene on the part of the teacher. And much that has been said is left rather painfully suspended in mid-air. But I must sharpen off the central point and stop. No one can inquire into the possible significance of blindness in the lives of human beings, particularly from the point of view of its possible effects as regards personality traits and attitudes, without recognizing the fact that as yet the problems in this connection have only been touched and not solved, and that they warrant and will yield to only the most enlightened thought and the most careful experimental investigation. We have demonstrated beyond all question of doubt the educability of the blind, we have devised and put into use the special apparatus for a kind of education, we have counted the costs in many directions and are meeting them by associations, institutions, commissions, legal enactments, and so forth. But in all of the efforts in these directions, we have tended to forget the individual blind person as a living human being needing adjustment often more than he needs the available kind of education. No one who can survey our schools for the blind impartially

(*Continued on page* 13)

Dr. Allen Says:

SAMUEL GRIDLEY HOWE A PROP AND STAY OF HORACE MANN

FORMER Commissioner of Education of Massachusetts, Payson Smith, has reminded me of the close co-operation between these two friends in reforming and improving the common schools of our state.

Their biographers stress this association. Mrs. Mann does so in the life of her husband; Mrs. Richards does so in her *The Servant of Humanity,* a life of her father. A letter of Dr. Howe, printed in this "life," shows that Mann consulted him in 1838 on the need of normal schools and received strong and unequivocal approval of such preparation for teachers. Mann himself wrote much later that for twenty years scarcely a day had passed in which a personal interview had not given him some new proof of his friend's wisdom and goodness.

The times were difficult for both these reformers. Mann, as head of the State Board of Education, came to be bitterly opposed by a group of Boston teachers who were content with existing school practices. He cleverly got Howe appointed to the School Committee. Presently this new member arranged to examine the schools by means of a written test of all the pupils, not merely an examination of representative classes of them, which hitherto had been conducted orally and, therefore, inconclusively. Acting on the maxim, "If you wish a thing well done, you must do it yourself, not leave it to others," he put this thing through so triumphantly, in spite of vigorous opposition, that Mann declared: "No one could have done it except an angel or Sam Howe!"

As to the effect on Mann's particular recommendations for improving public education, this doctor of medicine, this teacher of blind, deaf-blind, and feeble-minded children, this champion of the rights of the negro, this reformer of the public care of the insane and of the treatment of prisoners—this "Chevalier Howe"—continued to wield such telling blows in furtherance of progress, alike in action, speech, and print, that Mann once asked: "To whom is education more indebted than to him?"

Our two friends made a lengthy educational tour abroad in 1843, studying all sorts of schools and institutions, including reform schools and prisons; and they found many practices to approve. For example, they were convinced of the superiority of the oral instruction of the deaf to our sign language system and, on returning home, pioneered in behalf of a gradual change to the better way prevailing today.

In London their fellow reformer, Charles Dickens, took them to see the treadmill in operation, "a grievous institution." Here let me cite an experience not without a humorous touch. When Dickens learned that these American friends wished to visit the city's thieves' quarters he, having arranged the hazardous matter with the authorities, sent the following note:

> "*My Dear Howe*:—Drive tonight to St. Giles' Church. Be there at half-past 11—and wait. One of Tracy's people will put his head into the coach after a Venetian and mysterious fashion and breathe your name. Follow that man. Trust him to the death. So no more at present from THE MASK.
>
> Ninth June, 1843."

Finally, when in after years Mann was President of Antioch College, he took occasion in a sermon to eulogize Howe, saying: "He is the best specimen extant of all that was noble and valiant in the old chevaliers. . . . . Wherever any benevolent enterprise is undertaken in Massachusetts, his leadership or counsel is always invoked; and if he is absent in any critical juncture or desperate emergency, men cry out:

> 'One blast upon his bugle horn
> Is worth a thousand men.' "

Spoken English at the Oklahoma School for the Blind

Ruth Elliott

America has often, of late, been referred to as "lip lazy." We have become soporific in the pronunciation of words and slipshod in the enunciation of syllables. This is sheer carelessness with the most of us, but with the visually handicapped it is a serious problem. Since they cannot see the formation of the mouth for vowels and certain other letters, they, therefore, cannot know the correct position of the tongue in order to pronounce words distinctly, and so must be carefully instructed, step by step, in acquiring good speech. The Department of Spoken English at the Oklahoma School for the Blind is directing every effort towards improving the speech and diction of its pupils. This department offers a varied program of drills, exercises, and practice on certain words or letters in its aim to meet and overcome the difficulties it understands in its pupils.

"Muffed" speech is all too common among blind students; they attempt articulation with the lips barely apart. We have them place the index and middle fingers edgewise between the teeth for certain drills in order to give them the feeling of talking with the mouth open. On other occasions we have them place tongue depressors in the mouth to note the importance of the tongue's action in correct speaking. Many tricks are improvised to bring to the visually handicapped child a mental picture of the processes involved in correct speech.

Classes in Spoken English are held for twenty-five-minute periods twice a week, and extra classes when needed. One-half credit it received by high school pupils. Pupils, beginning with the third grade, take this subject each year until graduated from high school. Pupils with outstanding speech defects are given special attention. The third, fourth, fifth and sixth grades are mixed groups, but beginning with the seventh grade and continuing through high school, the boys and girls have class periods at different times. This seems to be a good plan because we feel that the older pupils are thereby rendered less self-conscious and, therefore, feel free to talk, and conduct themselves with less embarrassment.

During the year's work, many types of speech are touched upon. The high school pupils use as their texts, Josh Lee's "Public Speaking Manual" and Edwin Dubois Shurter's "Public Speaking." As a supplementary book they use Mary E. Clark's "Etiquette Junior," and study the chapters devoted to conversation, introductions and clothing. The pupils have asked for information on these subjects and it is gratifying to be able to have this material in braille. In the grade work stereotyped braille manuals have been made in the school's stereotyping room. For those who might be interested in knowing what material is in these manuals, a few poems are listed here:

Third and Fourth Grades: *The Owl and the Pussy Cat,* Edward Lear; *Wynken, Blynken, and Nod,* Eugene Field; *The Wind,* Robert Louis Stevenson; *The Raggedy Man,* James Whitcomb Riley.

Fifth and Sixth Grades: *Annabel Lee,* Edgar Allen Poe; *The Duel,* Eugene Field.

Seventh and Eighth Grades: *The Norse Lullaby,* Eugene Field; *Crossing the Bar,* Alfred Lord Tennyson; *Invictus,* William E. Henley; *Roofs,* Joyce Kilmer.

The third and fourth grade pupils enjoy dramatizing the poems. For instance, John wants the part of the narrator, Tom the part

of the owl, Mary the part of the pussy cat, and Jim the part of the pig. As the narrator recites, "The owl and the pussy cat went to sea in a beautiful pea green boat," Tom and Mary are busy rowing out to sea. Each speaks his part in turn and at the conclusion as the narrator finishes with "and hand in hand on the edge of the sand they danced by the light of the moon," they are all busy forming a ring and dancing around in a circle.

For the past four years, plays have been very popular with all of the pupils. Those in all of the grades enjoy working on them and producing them for the rest of the student body. After the plays have been presented, the children in the other classes offer constructive criticism as to which voices were best, which could be heard and which could not, which students kept in character throughout, and which pupils were not "at home" on the stage. An average of fourteen plays is given during the school year, including plays for special days, such as Easter, Christmas, Thanksgiving and Hallowe'en. In preparing to choose a play the instructor reads several, giving the class a chance to choose the play it likes best. In almost every instance the judgment of the class is good. The pupils like good plays, and each thinks, as it is read, the part he would like to have. After the play has been chosen, it is written in braille by either the instructor or the pupils. Each person writes his own part and the names of the other speakers in their turn, and, therefore, knows when his own turn comes in the play. After the play has been written and discussed thoroughly as to meaning, action and possible costumes, each pupil memorizes his part, and during class periods the lines are spoken, at first without any action. (The instructor explains what action takes place, so that the story is understandable.) When the pupils have memorized their respective parts so that they do not have to divide their attention between their lines and their action on the stage, actual stage practice begins. The counting of steps, or placing of rugs to facilitate each action is very essential. Furniture should be placed correctly for the first practice and should not be moved from the original spot. Voices, doorways and bells are easily located when the actor has thoroughly familiarized himself with the stage.

Each year it is the practice of the Oklahoma School for the Blind to produce for the public and the student body Henry Van Dyke's story, "The Other Wise Man." It is a four-act play having fourteen male characters and two female characters. The story is a very beautiful one and the pupils greatly enjoy producing it. Try-outs are held each year and no person plays the same role a second time. When "The Other Wise Man" is presented, the senior chorus, in its white vestments, sings antiphonally and as a chorus before the play begins and between each act of the play. The audience is invited to join in singing the familiar Christmas carols.

A few years ago the old Greek art of verse speaking or choric reading was put into practical application by Miss Marjorie Gullan, who is founder of the London and Glasgow Verse-Speaking Choir, and principal of the Polytechnic School of Speech Training in London. She introduced the revived art to America. It has been enthusiastically received by all sorts of groups, but particularly by the visually handicapped. The Oklahoma School for the Blind has two verse-speaking choirs; one group of fifteen high school boys, and one group of eighteen high school girls. The voices are placed in high, low and medium range, according to their respective pitch and tone quality. Those with strong voices must learn to subdue their tones, while the quiet, reticent speakers must learn to assert themselves and bring out their voices in order to gain the harmony of the entire group. It is thrilling and fascinating for both students and instructor to play with the readings, prose and poetry, and work for various effects. For instance, in the poem, "How Beautiful Were Once the Roses" (I. S. Turgeniev), the voices were divided into three levels, and the group enjoyed reading the

selection so much that they decided they would like to experiment with it, having the music of the same name arranged by A. Arensky as a background for the speaking. The effect was most pleasing and the group has been very successful with it. They have read it for various civic organizations and on several radio programs. In the poem, "Tarantella" (Hilaire Belloc), the voices were divided into three part speaking voices and at one line of the poem, which was "And the ting, tong, tang, of the guitar," the group decided to try striking the three words on third intervals of music notes. The low voices came in first with the "ting," followed by the "tong," and the higher voices with the "tang," each section sustaining its tone throughout; and at the end the three parts carried their respective tones through the phrase, "of the guitar." It was unusual and pleasing, and, needless to say, the group enjoyed it.

The boys' choric-speaking group is divided into two voices for the Biblical reading called "The Shepherd God," which was taken from the responsive readings in the back of a hymnal. The higher voices represent the minister's voice, and the heavy voices the response read by the audience. The group wanted an organ accompaniment for this selection, so Handel's "Largo" was chosen. It was very impressive and dignified. At present the same group is working on "The Old Oaken Bucket" by Samuel Woodworth, and the organ music will be used as a background for the speaking.

Other selections the girls' group in choric reading has done are:

The Mysterious Cat—Vachel Lindsay
Dance Africane
Dream Variation

The lines in these selections lend themselves particularly well to group reading.

The grade pupils have done some choric reading, such as *The Dorchester Giant* and *The Norse Lullaby*. Both boys' and girls' voices are arranged harmoniously, giving the effect of a full choir.

People frequently ask how members of visually handicapped groups know when to start and thus keep together. The answer is simple—a person in the back row in the center counts "one, two, three," to set the rate of speed to follow through the poem, and on "four" the entire group makes a clear, distinct and full attack on the first word; then the remainder of the performance is a matter of each doing his individual share in speaking in harmony as taught. There are no soloists in choric reading, no one particular person who stands out; choric reading depends upon the cooperation of the entire group.

Monthly recitals are given by students of the Spoken English and Music Departments on the last Friday of each month. This provides an opportunity for each pupil to do his or her bit towards the school's entertainment, at the same time giving him or her an added poise and self-confidence which will be a valuable asset all through life.

The National Occupational Conference, New York, has issued a number of new pamphlets in its series of occupational studies. These are appraisals and abstracts of available literature on various occupations.

Each pamphlet summarizes all the information found in published sources, describing what is done in the occupation, abilities essential to success, preparation necessary, entrance and advancement, earnings, number and geographic distribution of workers, possible future trend of employment, and the advantages and disadvantages of the occupation. A selected annotated bibliography is appended to each abstract, together with a recommended list of periodicals.

The occupational pamphlets may be ordered at ten cents each for single copies from the National Occupational Conference, 551 Fifth Avenue, New York City. Information regarding quantity rates, other titles in the series, and other publications of the Conference will be sent on request.

Dictaphone Equipment as Used at the Oklahoma School for the Blind

Edith Holt

In recent years much research has been carried on in regard to the teaching of typewriting. Better methods of presenting the work have been devised, such as rhythm drill for establishing an even, steady stroke, and better textbooks have been written. One of the latest developments is the use of the dictaphone with the multiple tube attachment. The Miller System of teaching typewriting has recently been installed at the Oklahoma School for the Blind.

Except for the multiple tube attachment, the equipment is the standard dictaphone unit used in any office—consisting of the recording machine, the transcribing machine and the shaving machine, which prepares the records for another using.

The multiple tube device, which is the new feature of dictaphone equipment for schools, consists of a long rigid tube attached by rubber tubing to the transcribing machine, and extending the length of two rows of four tables, placed in parallel rows, forming a unit of eight. Attached to the central tube at points convenient for the individual pupil, are rubber hose connections with earphones, which may be hooked about the central tube when not in use. The attachment may be had in units of six or eight, which means that in place of just one, six or eight persons may take material from the dictaphone at the same time. When the multiple tube is in use the machine is operated by the hand instead of the foot. The tube may be detached at any time that it is desired to use the machine for individual practice.

With this equipment there are available two complete sets of permanent practice records. One, composed of forty-five records, is designed to cover the entire course in typewriting, beginning with keyboard drills and sentence practice. Letters are given from then on, beginning with a speed of ten words a minute and continuing up to sixty words a minute. A phrase of a letter is given, alternating with a pause for writing, the length of the pause depending on the number of words per minute. The foregoing detailed explanation has been given only for those who may be entirely unfamiliar with this system.

The plan of the dictaphone course is to push the speed by increasing it gradually; reviewing, with a return to slightly slower speed, and then pushing forward again, each step to be mastered before another is undertaken. A textbook accompanies the records, containing much supplementary and practice material, aside from the records themselves. This is particularly needed in the beginning or early part of the course.

A second set of permanent practice records, numbering twenty-five, is strictly for office practice. These records begin at a speed of ninety words per minute and progress up to 150 words per minute. On these records the dictator does not pause or allow any time to elapse between phrases of a letter but continues speaking to the end of the record. These are used only for advanced students in individual office practice. When these records are being used, it is necessary to operate the machine with the foot in the usual manner. The records of both courses are devoted entirely to letter material, but the teacher may supplement this by using other cylinders containing any type of material which may be desired.

Since this work is new at the Oklahoma School for the Blind, it is still somewhat in the experimental stage. With this year's class, I have found it advisable in the first semester to spend considerable time on words and

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Home Economics for Boys in the Oklahoma School for the Blind

Clara Hamblin

Present day educators are becoming more and more of the opinion that we should offer our boys certain courses in home economics. And, why not? After all, the real purpose of all home economics courses is to help young people to develop ideals for personal, home and family living. Should not these courses be taught to boys as well as to girls?

For several years the Oklahoma School has admitted boys to the Home Economics Department. At first only a short course was offered for senior boys. The interest was not very keen, for the boys were not just sure that they were interested in taking what they termed a "girls' course." However, this attitude has now changed completely, and the boys are so interested that they are asking for a full-time course next year in the domestic science section.

The course which is offered to senior boys is called "Applied Science." On account of full schedules, we have never been able to have more than three twenty-five-minute periods each week, until late in the spring when we take up the cookery unit. When the boys are ready for this unit they come in after school one evening a week and stay until they have finished the assigned lesson. The applied science course has been worked out to cover the following units: Care and Selection of Clothes; The Cost of Living; The Home; Social Usages; Meeting the Problems of Life; Elementary Nutrition; and Practical Cookery for Boys.

As teacher of this course, I have had to feel my way along, so to speak. However, the course has been very satisfactory for the past two years. The boys were glad to learn to sew on buttons, darn hose, and do other simple forms of mending. After they completed this work they asked permission to learn to knit, waffle weave, and crochet rag rugs during the regular class discussion periods. Our greatest handicap is lack of time; however, these older boys are permitted to take their handwork to the cottage where they work during the recreational reading period.

Needless to say, the boys are most interested in the unit on practical cookery; and it is just that. We teach only the things that are practical for boys and men to prepare. Our boys are given an opportunity to offer suggestions as to what they want to cook, and thus far they have shown the best judgment, suggesting practical things such as biscuits, griddle cakes and coffee, and simple methods of preparing potatoes, eggs, rice and meat. The members of last year's class were interested in making a simple one-egg cake and the result was very satisfactory.

In some public schools the question has arisen as to whether boys should be given the course alone or should be permitted to join a class of girls. There is no question in my mind regarding this matter. I would not want a mixed class. I believe the boys will respond more freely, and better results will be obtained if they are permitted to form a class of their own. Reference books used in this course are: *Homemaking for Boys and Girls,* by Talbot, Lytle, Pearson and Johnson; *The New First Course in Homemaking,* by Colvert; *The Correct Thing,* by Stevens; and *Behave Yourself,* by Allen and Briggs. Various current magazines are also used.

Last year third and fourth grade boys were offered a course in knitting. Some of the boys found the work comparatively easy and have knitted scarfs and caps. For others it has been more difficult, but I believe that it has well served its purpose—the providing of good finger training. The boys have also

learned to waffle weave and some are now learning to crochet rag rugs.

The boys are acquiring new standards of living, as well as learning how to do some things which can be done during idle moments at home. I believe that any boy will make a better citizen for having taken a course in home economics.

(*Continued from page* 6)

and without the bias arising out of a comparison with what used to be, can possibly deny that the present policies and practices in such education leave much to be desired. I *know* that some of our schools which *think* they are progressive are actually not progressive at all. I *know* that in some of our schools the individual as being entitled first and above all things else to a normal and well-adjusted personality, is being sacrificed on unholy altars. These altars are not far to seek but I shall not name them.

Now, the chief remedy for the situation is obviously an appeal to mental hygiene. The situation demands a radical shift in the point of view. We have too long regarded the blind individual simply as a mind of one I. Q. or another. We must begin ourselves to see him and treat him as a personality if we are to expect the world to find and accept him as such. We must look first to his general adjustments in life as he lives it and must live it, and only incidentally to his acquisition of specific accomplishments. This is precisely the meaning of mental hygiene. For mental hygiene does not claim to be a separate and distinct science. It claims for its own no unique field of well organized fact. It is rather an attitude, a point of view, the achievement of which involves an enlightened appreciation of the various forces and factors which determine personality. Unless the education of the blind can achieve and make use of this enlightened point of view, it will continue to fall short in its efforts to justify its existence.

(*Continued from page* 11)

sentences and the mechanics of typewriting and on material presented by personal dictation, before beginning the regular course of letter writing from the dictaphone. This we are beginning in the second semester supplemented by other practice material and drills.

The second year class this year was too large to be accommodated by our multiple equipment tube of eight. Since it would be necessary to divide the class and the period in order to use it, this class has not had dictaphone practice.

The pupils in the third year class have made excellent progress in their work with the dictaphone and at the present time are working on forty to fifty words a minute records.

The office practice class consists of four advanced girls who use the dictaphone both for individual practice as it would be used in an office, and also as a group use it as a speed builder. Another phase of dictaphone practice for this class is taking dictation on the braillewriters at a definite rate of speed per minute, such as is required in certain types of civil service examinations for the blind. In establishing this class it is our hope that we may be able to place a well-trained dictaphone operator in some office in the commercial world.

The use of the dictaphone, in addition to increasing writing speed and providing much practice with business letters and other material, saves wear on the teacher and leaves her free to inspect the work while pupils are writing, noting errors to be corrected when the record is finished. The dictaphone is also an aid in causing a student to concentrate more closely on his work, thus helping to eliminate errors. In a school where learning is so largely dependent upon hearing, dictaphone work is a very good substitute for writing from copy, which is a major part of the work of pupils in schools for the seeing.

A Survey of Pupils at Perkins Institution With Respect to Vision, Intelligence, and Hearing

Janet H. Cairns

The factors involved in the establishment of an effective rapport between teacher and pupil are numerous and complex. Were they to be analyzed, a primary distinction might be made between objective as opposed to subjective elements, and the former are those which we shall consider. Faced by a new, individual pupil a teacher might well ask at least these three specific questions: What is his approximate mental level? How much vision has he? Is his hearing normal? It is not difficult to answer these questions; for the three factors involved —intelligence, vision, and hearing—lend themselves well to objective measurement. We appreciate the significance of obtaining these objective data when we realize that the influence of these three variables is not limited to the immediate and direct teacher-pupil relationship expressed in the classroom, but permeates the foundation on which is built the structure designed to meet the needs of the entire school. Recognition of the existence of individual differences and knowledge of the nature and range of these differences constitute the logical antecedents to the development of an effective program. The program should be so conceived that provision is made not only for the so-called "average" pupil but also for those individuals who are always to be found at the two extremes of any curve of distribution, those who are classified as misfits when a program fails to meet their needs. The strength of a program might almost be expressed in terms of its magnitude and flexibility, for its success might well be measured by these two characteristics.

Entering pupils at Perkins submit to a number of routine examinations. The information obtained by our physician, ophthalmologist, dentists, and consulting orthopedic specialist is supplemented by that contributed by our social worker and our psychometrist. Satisfactory adjustment of the child in this new environment requires a knowledge of and understanding of his rating in all of his physical and mental traits as discovered in this preliminary study. Then an effort is made to stimulate the child to his maximum activity without taxing him beyond his strength or ability. To achieve a balance between the demands of the environment and the powers of the child is the goal towards which we strive.

Ignoring but not minimizing the importance of the direct personal adjustments involved and limiting our discussion to a consideration of the three traits which may be most definitely described and rated—intelligence, vision, and hearing—we find interesting material for study. How often we are asked how each group of new pupils compares with the school population as a whole. In September, 1937, thirty-six new pupils were admitted. All of these students were examined by our ophthalmologist, all except three who are totally deaf were given the Hayes-Binet Intelligence Test for the Blind, and twenty-two who were old enough to give reliable responses were given hearing tests with a Western Electric 5-A Audiometer. Using for comparison data assembled late in May, 1937, when a general survey was made of the vision, hearing, and intelligence of the entire student body, then consisting of 266 pupils, we find that this entering group falls below the average in intelligence and hearing and compares closely with the rest of the school in amount of vision.

Assuming that the intelligence quotients calculated from the Hayes-Binet test constitute as reliable an index of intelligence as is available, we find that only 52% of this new

group, as compared with 73% of the entire school, possesses intelligence which is average or above. With respect to hearing, the difference is not so great. Normal hearing is recorded for 82% of the new pupils as compared to 90% of the total enrollment. Vision ranges from nil through 20/200 or better, the distribution showing that 45% of the new pupils and 50% of the old have the minimum amount of sight (nil to 1/200), while 11% of the new and 8% of the old possess the maximum amount (20/200 or better).

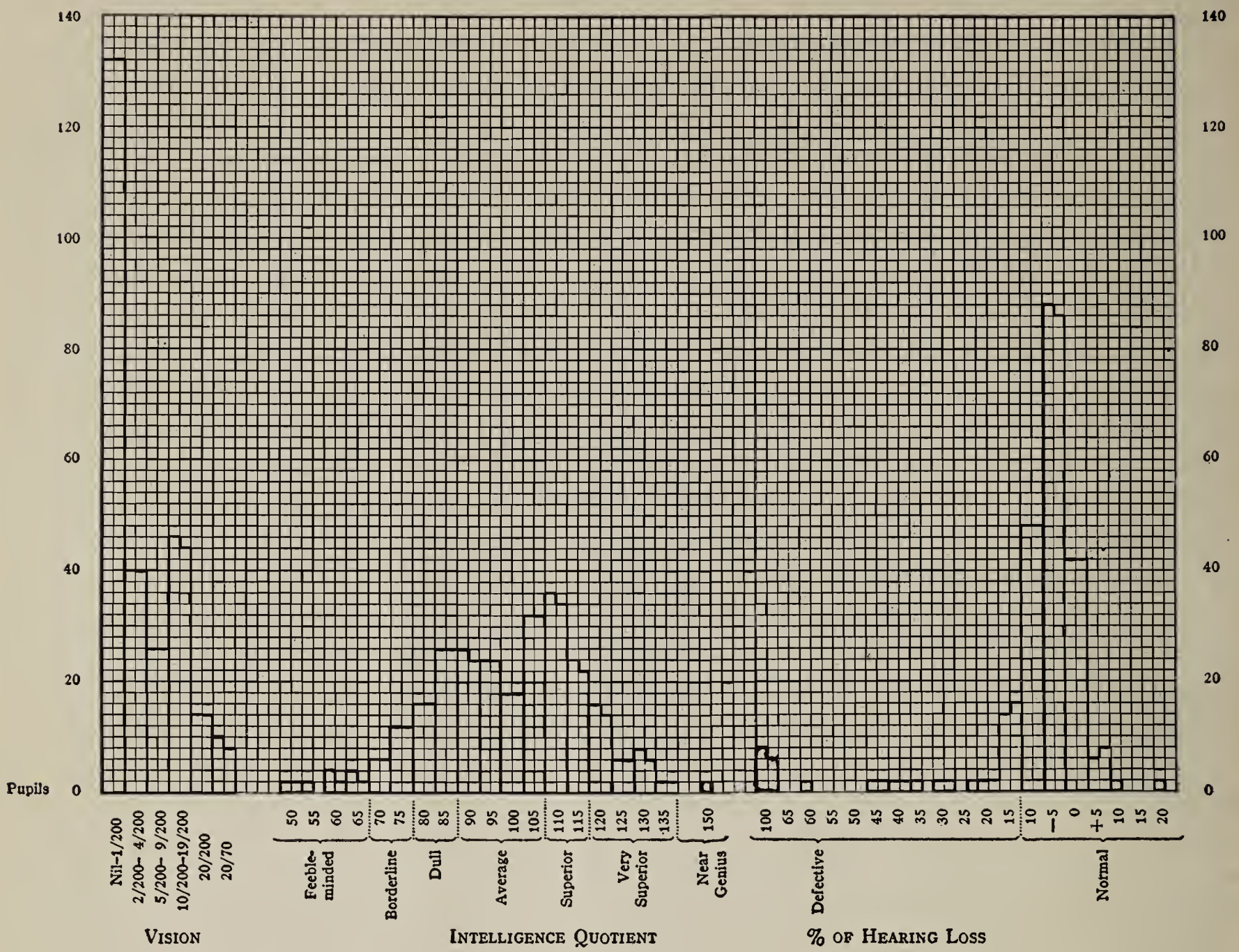
Too much emphasis must not be placed on the figures quoted above, for the small number of new pupils does not warrant our attaching statistical significance to, or drawing general conclusions from, the percentages given. However, the data collected for last year's study—data which were tabulated graphically as shown, each square representing one pupil—provide material for serious consideration. The pupils who fall in the center of the picture, those who represent the "average" students, present no special problems. The eye jumps to the opposite extremes of the distribution to find the individuals for whom special provision should be made. We find that questions should be raised with respect to three groups of pupils —those with the maximum amount of vision, those with limited mental ability, and those with seriously defective hearing.

The question has been raised whether instruction in a school for the blind is adequate if limited strictly to braille. Though one of the "requirements" for admission is that the pupil shall have vision of only 20/200 or less, we find individuals who can read ink print with comparative facility, making application to and being accepted in schools for the blind because no proper adjustment in public schools has seemed possible. Our study shows that the vision of 50% of our 266 pupils measures 1/200 or less; of 16% of our pupils ranges from 2/200 through 4/200; of 10% of our pupils from 5/200 through 9/200; of 16% of our pupils from 10/200 through 19/200; of 5% of our pupils is 20/200; and of the remaining 3% of our pupils is better than 20/200. It is gratifying to note that two hundred forty-three of our pupils should be reading braille while there are only twenty-three who might benefit by using ink print. But the 8% of pupils who have sufficient sight to read print will naturally reject finger reading and use sight even though it is many times more difficult to read braille with the eyes than it is to read ink print. The obvious conclusion would seem to be that schools for the blind should either provide supplementary ink print material for this group of pupils or should refuse to admit them, thus bringing pressure to bear on those members of the community upon whom responsibility for the education of these individuals must ultimately fall.

Consideration of the second graph shows that the intelligence of our students as measured by the Hayes-Binet intelligence test makes a distribution which compares favorably with the normal range found among seeing children. We find the expected scattering of individuals at the two extremes of the curve and a concentration of pupils at the mid point. Considering as average or above those individuals whose I. Q.'s fall at 90 or above we find that 73% of the pupils are to be so classified. The remaining 27% may be considered as dull, borderline, or feebleminded. Some of this group may adjust to a simplified program of instruction suited to their capacities for achievement; others will receive little benefit from any but the most elementary instruction. Such retarded pupils—specifically those whose intelligence quotients range from 50 through 65, of whom we have nine,—do not logically belong in a school organized for normal individuals.

The third graph calls for less comment than either of the other two, for we need only to point out that our pupils test remarkably well with respect to hearing. With the use of an audiometer which measures hearing in terms of per cent of loss we found that 90% of the individuals tested had nor-

Distribution curves showing the results of a survey of Vision, Intelligence, and Hearing, at Perkins Institution, May, 1937



mal hearing, and that only 10% showed defective hearing, involving a loss of 15% or more. Only nine individuals showed hearing more acute than the average, a superiority of 5%, 10%, or 20%—a fact which might be cited as a refutation of the often repeated statement that blind persons have exceptionally acute hearing. The fact that seven of our pupils are totally deaf, and that six more are so seriously handicapped that regular classroom instruction is not possible throws new light on the general picture, for these thirteen pupils receive their schooling in the deaf-blind department and thus are pupils whose individual problems are satisfactorily solved. For the few pupils whose hearing is defective enough to cause them difficulty, though not so extreme as to necessitate transfer to the deaf-blind department, special medical attention and follow-up care are provided and special provision for class instruction is made. In no case has it been found impossible to make a satisfactory adjustment. Hearing, thus, does not at present constitute a puzzling problem towards which attention need be directed.

While such a survey might ultimately lead to the reshaping of a general program and the adoption of changes in policy where such steps seem indicated, it served immediately to focus attention upon the specific pupils who fell at the extremes of the distribution. A thorough case study was made of each individual whose rating in one or more of the traits examined placed him outside of the normal range of deviation. Every possible means for securing better adjustment of these students was considered and constructive suggestions were carried out. A

(*Continued on page* 19)

Commercial Education for the Blind

Sarah V. Long

Commercial *Education for the Blind,* by Lorraine Louise Geiger, was submitted in partial fulfillment of the requirements for the degree of Master of Commercial Science at Boston University, in 1935.

The aim of the writer of this thesis is to present a representative picture of what is being done in the commercial field in the schools for the blind in America and to suggest future possibilities.

The first chapter deals with the history of the education of the blind and gives an interesting account of how Valentin Haüy, in the latter part of the eighteenth century, made the first attempt at collective education of the blind and of his discovery of the use of raised print. Then follows the story of the invention of braille, the first system of raised characters which could be written as well as read, and which was named for the inventor, Louis Braille.

The history of the blind is traced from the inception of the work in foreign countries to the organization of the three oldest schools for the blind in America: Perkins, New York and Overbrook.

Chapter II takes up "Vocations for the Blind." A table is given showing the percentage of blind persons employed in various occupations in 1910 and 1920 and the percentage of seeing persons engaged in the same occupations.

The author makes her approach to the commercial field by pointing out a large number of occupations in which blind people engage, and then showing how advantageous and helpful a knowledge of the fundamentals of business would be to these same blind workers.

The need of a good course in vocational guidance, under a trained vocational director is stressed. Miss Geiger believes that:

1. Each school for the blind should have a definite vocational policy and a trained counsellor,
2. The knowledge and experience of graduates who have succeeded in some occupation or profession should be brought to bear upon the guidance program,
3. There should be a proper correlation of vocational guidance at the school with the programs of the State Commission for the Blind and the local agencies for the blind.

The writer feels that a program of this type would eliminate much aimless drifting after pupils leave school.

Mention is made of the increasing number of blind persons who enter the business field. A recent report on occupations of graduates of schools for the blind shows the following percentages:

Salesmanship	14%
Independent business	14%
Professions	17%
Clerical	4%
Miscellaneous	15%
Total	64%

This indicates that a number of blind persons would profit from some business training.

Chapter III mentions various instances of blind people employed in rather unusual occupations.

Chapter IV gives a history of commercial education as it applies to the general public.

Chapter V deals with a commercial course for the blind. The following subjects are mentioned in the building of such a course: Junior Business Training, Typewriting, Bookkeeping, Business English, Economics, Commercial Law, Commercial Arithmetic, Commercial Geography, Ethics, Salesmanship, Insurance, Telephone Operating, Braille

Shorthand, Ediphone and Dictaphone Operating.

In speaking of how to plan a course of this type, the author refers to Prof. Kitson, who, in his book on "Secondary Education," gives four major topics to consider in building a commercial course with a vocational air for any group:

1. Ascertaining the occupations in which the graduates are likely to engage,

2. Analyzing these occupations to determine the skills and knowledge which the workers should have,

3. Obtaining material which will provide the information needed, and arranging it in usable form, and

4. Providing opportunities for practice on the job.

Chapter VI gives the results of a questionnaire sent to forty-seven schools for the blind in the United States. The most important fact brought out was the wide variation in commercial courses for the blind, or, in other words, the lack of such uniformity and standardization as exists in the public schools in all states.

The teaching of typewriting is discussed in Chapter VII.

"Braille Shorthand" is taken up in the following chapter. The author says that braille shorthand should be used for vocational purposes only and that it should be taught only to those who have the qualifications which fit them for office positions. She quotes an educator of the blind, a man with many years of experience, saying, "Not everyone who would like to learn shorthand is able to go through with it and I would recommend it to no one who is not a good speller, a good composer and thoroughly accurate, as well as speedy on the typewriter. Only those of more than average ability should undertake it and they should be willing to pay the price —hard work and persistence. However, for those prepared for it and adapted to the work, braille shorthand holds out a new and encouraging chance."

The writer speaks of the Stainsby-Wayne shorthand machine, made in England and sold by the National Institute for the Blind in London. Perkins Institution manufactures its own shorthand machine.

There is a system of braille shorthand published by the National Institute. Teachers who find the vocabulary insufficient add to it by adapting word signs and contradictions similar to those of other systems of shorthand.

Chapter IX deals with opportunities for blind people through the medium of Ediphone and dictaphone operation.

"Junior Business Training" is taken up in Chapter X. Miss Geiger speaks of the practical information it includes which all should have regardless of the vocations followed. The student becomes acquainted with investments and insurance, business forms, the kinds of information supplied by various reference books, banking, checking and savings accounts, filing equipment and how to use it with braille indexes, the use of the telephone and telegraph, safe methods of sending money and package, travel information, the elements of commercial law, how business is organized and the types of business organizations, and thrift through the broader aspects of efficient earning, wise spending, systematic saving and secure investing, including money and time budgets. Some suggestions are given for motivating the class work.

The next three chapters deal with business English, economics, salesmanship, office practice, commercial arithmetic, commercial law, and commercial geography.

Testing is taken up in Chapter XV.

In the concluding chapter, the author tells how the movement of educating the blind has developed through the years until today practically every civilized country offers its blind the opportunity of securing an education.

She has endeavored to show that much progress has already been made in the commercial education of the blind and has proved that a sufficient number of blind stu-

dents have been successful in various lines of work in the business world to justify the existence of a good, sound commercial course in schools for the blind. The improvement that has been made leads one to look forward with a very hopeful aspect to its growth in the future because it will undoubtedly receive much more attention and consideration in the years which lie ahead. The author hopes that in time the commercial education of the blind will be expanded into a full-fledged, recognized program in all schools for the blind.

Miss Geiger gathered her information from periodicals and books, interviews with educators, and answers to the questionnaire. She has given many pertinent suggestions relative to this phase of the education of the blind.

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careful follow-up will insure them every possible chance of successful progress throughout their attendance at school. In a sense the survey will never be completed but will serve as a running record. All pupils are checked frequently with respect to each of these three faculties; new pupils will be admitted, old ones will be discharged, and such changes will be reflected in fluctuating curves. Paralleling any changes in general trends we shall make modifications in educational procedure designed to lessen the lag between practice and need.

Dr. Berthold Löwenfeld, who was an instructor in the Israelitisches Blinden-Institut in Vienna for a number of years prior to the recent annexation of Austria by Germany, and who spent a year in the United States studying educational and psychological work for the blind as a Rockefeller Social Research Fellow, has returned to this country and expects to make his home here. Dr. Löwenfeld has contributed several articles to *The Teachers Forum* and is an authority in our field. He and his charming wife would be valuable assets to any of our school families.

New Publications

During the past few months the Foundation has published three books in which all teachers and workers in our field will be interested. Of one of these the *New York Times Book Review* says: "The increasing interest on the part of the general public in the problems relating to physical blindness will receive fresh stimulation in H. Randolph Latimer's *The Conquest of Blindness*. In this book the author makes two distinct approaches to his subject. Through the medium of autobiography he shows how lack of sight can be conquered by the individual, and in the very act of recounting his lifetime association with work for the blind he gives a running history of the efforts which State and private agencies have made to conquer blindness during the last half century. Dr. Latimer's guiding purpose, as he himself states it, has been to 'lift work for the conquest of blindness out of the miasma of alms and asylums into the more wholesome atmosphere of social adjustment.'"

Our beloved Dr. Allen has the following to say of another of these books: "Such literature on blindness and the blind as exists—and there is considerable—is mostly scattered and difficult of access. While the very nature of the subject has begotten much of sentiment and opinion, its interest and importance have produced some excellent treatises—the latest being *What of the Blind?*, a collection of nineteen short papers by men and women experienced in our highly specialized field. The fact that nine of these are themselves blind, adds much to the authoritativeness of this survey."

The third book, our *Directory of Periodicals of Special Interest to the Blind*, is a new, revised edition of the *Directory of Periodicals* published in 1932, and of the *Compilation of Braille Periodicals and Inkprint Magazines Relating to the Blind* issued in 1929. The present edition lists 271 magazines published in 28 different countries.

The prices of these books are $3.25, $2.00 and 50 cents, respectively, all postpaid.

The Teachers Forum

for

Instructors of Blind Children

Address all communications to

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The Editor will not be responsible for opinions expressed in signed articles

SEPTEMBER, 1938

A. A. I. B. Convention

The thirty-fourth biennial convention of the American Association of Instructors of the Blind, held at the Michigan School for the Blind in Lansing, from June 27th to 30th, was particularly noteworthy. There was an attendance of over three hundred and all of the sessions were interesting and instructive. Both the State Superintendent of Public Instruction and the Governor were present on the opening night to welcome the delegates. Another unusual feature was the introduction to the audience of nine new superintendents.

A variety of splendid music was furnished by the Michigan School orchestra and faculty members of several different schools. Extensive industrial and academic exhibits were on display in a separate building. The forenoons and evenings were given over to general sessions, with sectional meetings in the afternoons, except that a part of the time on Tuesday evening was taken up by a most enjoyable faculty recital, and Thursday afternoon was devoted to an interesting visit to the headquarters of the Michigan State police. No one could hear all of the papers or discussions in which he was interested on account of several meetings being held at the same time, but most of the material presented will soon be available in the Proceedings.

After ten years of faithful service, Mr. Joice declined being renominated for secretary-treasurer and our genial host, Mr. Cauffman, was unanimously elected. The other new officers are J. S. Ganey, President, and R. W. Woolston, Vice-President. W. G. Scarberry was elected as Chairman of the Executive Committee. The delegates received a cordial invitation to hold their 1940 convention at the Western Pennsylvania School for the Blind.

Many teachers in our schools for the blind very infrequently or never have an opportunity to visit another school for the blind while it is in session. Also, there are many teachers who have helpful ideas along certain lines which should be passed on to others, but feel that the presentation of these will not provide articles of sufficient length to be worth publishing. The editor feels that such articles would be of great value, and urges all teachers to contribute something from their own experience, even if only a few paragraphs. In this issue we are printing three excellent articles by teachers in the Oklahoma School.

Our Contributors

Dr. C. B. Minner is an instructor at the University of Oklahoma.

Miss Ruth Elliott is the teacher of public speaking and girls' physical education; Miss Edith Holt is the teacher of typewriting and spelling, and Mrs. Clara Hamblin is the director of home economics at the Oklahoma School for the Blind.

Miss Janet H. Cairns is secretary of the Department of Personnel and Research at Perkins Institution and Massachusetts School for the Blind.

Miss Sarah V. Long is the teacher of commercial subjects at the Pennsylvania Institution for the Instruction of the Blind.

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What Do Blind Children Know?

Samuel P. Hayes, Ph.D.

One of the earliest aims of education was to pass on to the young the knowledge accumulated in the life experiences of their elders. Wise parents patiently answer their children's incessant questions and wise teachers strive to keep the questioning spirit alive throughout the school years. We expect the most desirable vocational opportunities to be offered to graduates who have made the best use of their chances for education; and to those who have become experts in any line the public is glad to go for information and guidance. A certain reverent respect is given to those who enter the professions, to great statesmen, and to public leaders. Naturally, then, we are all interested in the progress of the young at various stages; their educational successes and their failures at any level become matters for serious consideration.

Many years ago a number of educators startled the public with an exposé of glaring deficiencies in the mental equipment of children entering school, and similar failures in the educational process at later stages have been reported from time to time. In 1880, G. Stanley Hall ([3])* made a survey of the common knowledge possessed by children entering the Boston public schools which led to the striking conclusion "that there is next to nothing of pedagogic value the knowledge of which it is safe to assume at the outset of school life," and induced him to recommend that "the best preparation parents can give their children for good school training is to make them acquainted with natural objects, especially with the sights and sounds of the country." Besides tables of results showing a "high rate of ignorance," Hall quotes many surprising misconceptions. "Skeins and spools of thread were said to grow on the sheep's back or on bushes, stockings on trees, butter to come from buttercups, flour to be made of beans, oats to grow on oaks, bread to be swelled yeast, trees to be stuck in the ground by God and to be rootless, meat to be dug from the ground, and potatoes to be picked from the trees. Cheese is squeezed butter, the cow says 'bow wow,' the pig purrs or burrows, worms are not distinguished from snakes, moss from the 'toad's umbrella,' bricks from stones, etc. An oak may be known only as an acorn tree or a button tree, a pine only as a needle tree, a bird's nest only as its bed, etc. So that while no one child has all these misconceptions, none are free from them, and thus the liabilities are great that, in this chaos of half-assimilated impressions, half right, half wrong, some lost link may make utter nonsense or mere verbal cram of the most careful instruction as in the cases of children referred to above, who knew much by rote about a cow, its milk, horns, leather, meat, etc., but yet were sure from the picture book that it was no bigger than a small mouse." In further comment, Hall remarks, "When hams are said to grow on trees or in the ground, or a hill is described as a *lump* of dirt, or wool as growing on hens, as sometimes occurs, deficiency is obvious."

With the rise of intelligence testing at the end of the century, items calling for information upon everyday experiences were always included, especially in the tests for the lower years, on the assumption that a bright child would pick up more miscellaneous knowledge than a dull child. In the Stanford Binet tests ([27]) an average three-year-old is expected to be able to point to parts of his body, to name familiar objects, to give his sex and his last name; an average five-year-old to name the colors *red, yellow, blue,* and *green,* to give

* Numbers refer to the list of references at the end of this article.

definitions of *chair, horse, fork, doll, pencil,* and *table,* and to know his age. In group tests of intelligence similar items appear, with increasing dependence upon school knowledge as the years go on. But here and there are children of fair ability and various ages who suddenly fail upon matters of everyday experience, leading one to apply Hall's caution at every stage of the educational process. Even the selected group that goes to college is no exception to the rule, for we learn that when the information sheet of the Army Alpha test ([29]) was given to college freshmen, most surprising errors occurred. "Simple biological facts that are supposed to be in common knowledge and parlance are outside the mental realm of many of the college students, or are confused within it. Four per cent of them would be willing to ask a dairyman if his cows are Leghorns. And when we discover that six per cent do not know what an artichoke is, while six per cent more assert it to be a fish, three a lizard, and one, no doubt thinking of the strangling powers (choke) of a boa constrictor, claims that it denotes a snake, we cannot but wonder in what world these sixteen per cent received their information—or lack of it. But we receive a real shock when we discover that a chameleon is voted a member of the bird, insect, and fish families by twenty-three per cent, four per cent, and four per cent of the group, respectively; while another thirteen per cent give up the problem of classification as a thing impossible; so that one can safely say that only a little over one-half of the number really knows that a chameleon is a reptile that changes its color but not its genus. Thirty per cent do not know the location of the thyroid gland, and either refuse to detail their ignorance concretely, or place it indiscriminately in the shoulder, head or abdomen, the handy receptacle for all physiological x's and y's. One daring soul even had the audacity to state that rubber is made of hides.

"Geography does not make any better showing; in fact, even a lower grade of recognition is exhibited. It need not affect the world's happiness greatly if a certain third of our student body would take a liner for China if their destination were Tokio, for the name of this Oriental city does sound Chinesy, and it is a personal matter, anyway; and, besides, this method of instruction would be effective and according to sound pedagogical principles. But it would be a decided affront to some of our time-honored American institutions if they should learn that out of one hundred students who wish to attend Yale University, four would have to look in the atlas to know what part of the world they were bound for, while six would purchase railway fares for Ithaca, and thirty-six would proceed blithely on their way to Cambridge. But once arrived in New England, two of them would be forced to the discovery that Boston is not a city of Maine, and one would find, not without surprise, that Massachusetts, instead of Connecticut, claims the honor of harboring 'the Hub.' Such are the educational possibilities of travel."

Every school for the blind probably has quite a collection of stories illustrating the misconceptions and misunderstandings of blind children. Perhaps our recital of the errors of the seeing will make those of the blind seem less queer. To be sure, the blind child was in error when, according to the familiar story, she said, "A chicken has four legs," but her mistake seems almost inevitable when her reason is given—"Whenever we have chicken at home there are always four drumsticks!" In order that teachers may discover whether, and to what degree, blind children are inferior to the seeing in everyday knowledge, a few representative tests are presented:

A. Sangren Information Tests for Young Children ([23])

Object: The purposes of this test are (1) to call attention to the need for greater definiteness and certainty in nursery and kindergarten instruction, (2) to determine what

young children at various stages of maturity and various stages of instruction do know, (3) to attempt to fix some standards of promotion and placement of children in the early years of their educational careers, and (4) to provide a basis for instructional practices and classroom management at the beginning of the first grade.

Materials: One examination manual for the tester and an individual record blank for each pupil to be tested, from World Book Co., Yonkers-on-Hudson, N. Y.

Test I (Nature Study) consists of twenty-eight questions like the following: (1) "Tell me, what is this table made of?" (2) "What do birds make their nests of?" (3) "Which farm animal gives us milk?"

Test II (Numbers) consists of seventeen questions beginning with: (1) the counting of groups of 3, 5, and 8 stars and all the stars together; (2) "Who is the older(oldest), you or your father?" (3) "Which of these four squares is the biggest? Which is the largest?"

Test III (Vocabulary) calls for the definition of thirty-five words: (1) "Show me something red." (2) "What is a hat?" (3) "What is a basket?"

Test IV (Social and Civic Information) consists of thirty questions: (1) "What does a milkman do?" (2) "What is your name?" (3) "Why must people walk on the sidewalk instead of in the street?"

Test V (Household Knowledge) consists of sixteen questions beginning with: (1) the naming of seven dishes and table implements from a picture (omitted in testing the blind); (2) "What is a broom used for?" (3) "What is the cupboard in the kitchen used for?"

Test VI (Language and Literature) consists of nine parts: (1) A little story is read and seven simple questions are asked about it; (2) a little poem is read and five questions are asked about it; (3) a simple riddle is read and the child is asked, "What is the story about?"

Method: Follow the directions for giving and scoring as printed in the manual, with the following minor changes: In Test I omit items 7, 19 and 20; in item 8 a toy bird may be used instead of the picture; in item 10 say, "Which one of these things grows on a tree: an ear of corn, a carrot, a bunch of grapes, an apple, or a rooster?" In Test II present the material for items 1, 3 and 4 tactually; in 1 using dots for the stars, in 2 using squares with sides twice as long and twice as far apart as those in the ink copy, and in 4 using lines twice as long and twice as far apart as those printed. Omit items 10 and 17. In Test III, item 1, instead of "Show me something red" say, "Tell me about something that is red." Make the same change in item 14. In Test IV omit items 9 and 19. In Test V omit items 8 and 11, and in item 1 use samples of the objects pictured. In Test VI omit items 3 and 8. The omissions suggested reduce the possible scores for all the tests except III, and decrease the total maximum possible score from 190 to 152 points. These reductions must be taken into account in comparing the blind with the seeing, six points being deducted from the norms for Test 1, thirteen points in Test II, three points in Test IV, six points in Test V and ten points in Test VI. It may be possible later to suggest substitutions of equivalent material to bring the possible scores up to the original figures.

Results: A preliminary trial of the Sangren Information Tests at Perkins Institution with thirty-five children in the kindergarten, first and second grades, indicated that these tests might give significant evidence of the mental status and educational promise of young children, thus forming a valuable supplement to the Hayes-Binet intelligence tests, with which they show a high correlation. Considering the small number tested we do not feel justified in presenting the numerical results, but in summary we may say: (1) that the blind kindergarten children tested practically equal to Sangren's seeing norms in all the tests except No. 1, Nature Study, in which the blind were distinctly inferior; and (2) that the blind first grade children tested

above the seeing in No. VI, Language and Literature, about equal to the seeing in No. IV, Social Science, and below the seeing in the other four tests. The profile chart printed on the record sheet proved exceedingly valuable in bringing to the attention of the teachers each child's special strengths and weaknesses, with a clear indication of the points at which remedial work was needed. Here, as in the average results by grade, the weakness in Nature Study and the relatively strong position in Language and Literature are obvious.

An analysis of errors disclosed some interesting points which have guided us in omitting or modifying some of the items when used with the blind. Although models of animals were carefully selected and substituted for the six pictures in Test I, item 7, very few children could identify more than two correctly. The dog, sheep and horse were known best; the elephant was frequently called a cow or a bear, while the kangaroo was judged to be a squirrel or a monkey; the model of a lion, which was substituted for the rhinoceros of the picture, was often called a rat or a pig! Apparently the children's vocabulary of animals was very limited and many were unable to give the names of three animals found in a city park or zoo, as required in Test I, item 18. Naturally, they failed on Test II, item 17, when asked to read numbers; few blind children learn to read before entering the second grade, so this test and Test IV, item 8, should be omitted. In the vocabulary Test III, such words as *post, carry, business, raise* and *piece* were stumbling blocks, but the total scores compared favorably with those of the seeing. In Test V, item 1, the dishes and table silver were easily recognized by touch, but the blind children were not able to name the kitchen utensils of V, item 8, doubtless because they are too young to have had cooking experience; so the latter test is to be omitted. They do not know what animal beef comes from nor why garbage should be destroyed. In fact, the word *garbage* had to be explained to many of them. But when asked, "How does your mother can fruit?" (Test V, item 14), some of them gave the up-to-date answer, "She buys it." In Test VI, item 3, the riddle about the stars is obviously unsuited to the blind and should be omitted.

B. Pressey Test of Practical Information

Object: The purpose of this test is to measure the pupils' knowledge of objects and ideas of common occurrence in everyday life.

Materials: An embossed sheet containing the following words, slightly modified from Pressey's Group Point Scale, test 9 ([22]). This material may be obtained through the American Printing House for the Blind.

Method: Pass around sheets of paper and have pupils write name, age, grade and the date at the top. Then pass the sheets for the test and say:

"On the sheets I have given you, you will find a number of groups of words. The first group reads—*'man, cow, hen, dog, cat.'* Now which of these five animals usually lives the longest?" Get the answer, *"Man."* "Which one usually lives the shortest time?" Get the answer, *"Hen."* "Write the names of these two animals on your sheets."

When all have finished writing, say:

"Now look at the second group—*'train, mule, horse, bicycle, steamboat.'* Of these five, which goes the fastest?" Get answer, *"Train."* "Please write that down. Which goes the slowest?" Get answer, *"Mule."* "Write that down."

"Now you will work through the other lists and write the answers without saying them aloud. Read the list numbered 3 and decide which thing is the heaviest and which is the lightest. Write these down on your papers, the heaviest first and then the lightest. Use a new line for each list of words."

Allow one minute for writing and then say: "Now look at group number 4 and decide which thing is hardest to break and which is easiest to break. Write these down, the hardest first and then the easiest." It is

EXAMPLES

1	2	3	4
man	train	water	string
cow	mule	wood	glass
hen	horse	cork	steel
dog	bicycle	sand	pencil
cat	steamboat	iron	paper

5	6	7	8
milk	drop the handkerchief	Fourth of July	scissors
salt	football	Washington's Birthday	chisel
bread	baseball	Memorial Day	plane
fish	hide and seek	Thanksgiving Day	saw
meat	checkers	Labor Day	knife

9	10	11	12
policeman	bill	smallpox	weaver
sheriff	coins	scarlet fever	riveter
senator	check	measles	typesetter
mayor	money order	tuberculosis	coal picker
representative	stamps	diphtheria	cabinet maker

not essential that the pupils be limited to exactly one minute, but this time will probably be sufficient.

Allow one minute for writing and then say: "Now look at group number 5 and decide which thing costs most and which costs least. Write these two, first the one that costs most, and then the one that costs least."

Proceed in similar fashion with the others, repeating the directions each time, as in the above examples.

6. The game that requires most people in order to play it, and the game that requires the fewest.

7. The holiday that comes nearest to New Year's Day and the holiday that comes nearest to the middle of the year.

8. The tool that is hardest to sharpen and the tool that is easiest to sharpen.

9. The most important man and the least important man.

10. The safest way to send money and the least safe way.

11. The disease that it takes longest to get well from and the disease that one recovers from most quickly.

12. The man who must have most skill and the least skilled worker.

Scoring: Score the pupils' papers according to the following key. Allow one point of credit for each correct answer. If two correct answers are given, but in the wrong order, allow one-half credit for each; if one correct and one incorrect answer is given, but in the wrong order, allow one-half credit for the correct answer. If more than two answers are given for any group, allow no credit. The maximum possible score is 20. Multiply the score by 5 to get per cent of correctness in the test.

KEY FOR THE PRESSEY TEST OF PRACTICAL INFORMATION

3. iron, cork
4. paper, steel
5. meat, salt
6. football, checkers
7. Thanksgiving Day, Fourth of July
8. saw, knife
9. senator, policeman
10. money order, coins
11. tuberculosis, measles
12. cabinet maker, coal picker

Interpretation: If a single grade is tested, the teacher may be interested to make a scatter diagram of the pupils' scores by age, tracing across the display of scores a curve based on the results obtained through the use of this test with 567 pupils in nine schools for the blind, which we have presented in Table I following. If a whole school is tested, a series of scatter diagrams is suggested, based on chronological age, mental age, intelligence quotient, and grade. We have as yet no standards by mental age and I. Q. but

TABLE I

Results Obtained in Nine Schools for the Blind with the Pressey Test of Practical Information

Ages	Number of pupils tested	Median scores in per cent correct	Standards for the blind
9	9	25	28
10	12	35	35
11	33	45	40
12	42	40	47
13	48	55	48
14	63	50	55
15	68	60	58
16	57	65	62
17	69	60	63
18	47	65	65
19	40	70	68
20	79	70	70
Total	567		

interesting points may emerge from the diagrams in any one school. The smoothed curve for the blind in this test is one of the most regular curves we have found, thus indicating that the blind show approximately equal annual additions to the kind of knowledge measured by this test. As one might expect, the blind are distinctly below the seeing in general information, the curves indicating an apparent retardation of four years in each age group from 10-16 and of five years in the 17 and 18 year groups. On the other hand, the possession of sight in the early years of life does not seem to give the pupils any great advantage in this test: the median score for those blinded at birth or during the first three years is 55 per cent in this test, for those blinded in the fourth, fifth, or sixth years, 60 per cent, and for those blinded after the sixth year, 65 per cent. Moreover, some pupils blinded from birth or early infancy make very excellent scores in this test, so that one may fairly hope to bring a large proportion of the blind up to seeing levels by enriching their life experience.

C. MEASUREMENT OF SCHOOL ACHIEVEMENT

A considerable amount of general information is informally and incidentally acquired by children in the home, on the playground and in the street; this we attempt to measure by tests of practical information. In the schools we try to make sure that all children acquire, more or less systematically, the basal facts and mental tools needed for intelligent citizenship; this we attempt to measure by educational achievement tests.

Since 1916 we have been adapting for use with the blind various typical achievement tests, and in recent years a considerable number of such tests has been described in the *Forum*. A complete list of these adaptations is given in the references at the end of this paper. Perhaps the most significant is the recent adaptation of the Stanford Achievement Tests ([12]) in five equivalent forms, making it possible to note children's progress in reading, spelling, language usage, literature, history and civics, geography, physiology and hygiene, arithmetical reasoning and computation. The whole series of tests has now been used in two eastern schools for three successive years, yielding at least two conclusions pertinent to our topic. (1) Grade for grade the blind children in these two schools tested nearly up to the standards for the seeing the first year the tests were used, in all parts of the series except in arithmetical computation, where lower scores were easily understood in terms of the limitations of their training and the mechanical difficulties in testing. (2) During each succeeding year weak points have been corrected, so that with the single exception noted before, we may say that the pupils in these two schools test at or above the seeing standards in all their school subjects. In other words, they are well supplied with the information that is disseminated in the school room, and can use it in test situations. A similar conclusion may be drawn from Miss Georgie Lee Abel's report ([1]) in the *Forum* for May, 1938, in which she gives the results of the use of another survey achievement test series, The Unit Scales of Achievement, in the fifth and sixth grades of twelve schools for the blind. She found the median scores of the blind in the fifth grade distinctly above the seeing

norms in all but the first test (Reading); a similar superiority appeared in the sixth grade, though to a lesser degree, and with the blind slightly below the seeing in the fundamental operations of arithmetic, in which the fifth grade also was not so superior as in the other tests. This survey included tests in reading, geography, literature, history, problems and fundamental operations in arithmetic, spelling, capitalization, punctuation, and language usage.

From these two surveys we may conclude that grade by grade blind children are picking up about as much school information as the seeing. Of course, blind children average at least two years older than seeing children in the same grades, so comparisons by age, either chronological or mental, demonstrate their retardation.

Two further measurements of achievement would seem very much worth while, a standard graduation examination to determine whether pupils are ready to leave the elementary grades and begin high school work, and a standardized test for measuring progress in the high school. The latter need is already being met by the use of the Sones-Harry High School Achievement Test ([25]) in at least one school for the blind; the former need may well be met by an adaptation for the blind of the Otis-Orleans Standard Graduation Examination for Elementary Schools.([21]) This latter should be a boon to teachers not only in determining in general whether their pupils measure up to graduation standards, but especially in deciding whether some particular boy or girl is ready for promotion to high school work. It might well be substituted for the regular examinations given to eighth grade pupils, as its content is confined chiefly to material taught in that year. The derivation of this examination will show its nature and value. The subject matter was selected in accordance with courses of study and scientific investigations regarding the actual achievement of elementary school pupils and with a view to making the test equally applicable in all parts of the United States. The authors use a variety of questions, not simply to make the test more interesting but rather to suit the type of question to the content and to allow for any possible differences between pupils in their reactions to different types of questions. The spelling words were chosen from the Iowa Spelling Scales: Grade VIII; the reading test consists of five paragraphs, with five questions on each, dealing with geography, science, literature, history and current events; the vocabulary test was formed from Thorndike's *Teacher's Word Book*([28]); the items for the tests of arithmetical computation and reasoning were chosen after a careful analysis of several modern texts, not using any computation or topic which did not appear in all these texts; the grammar test, similarly, was based on modern texts, omitting all fine points and technicalities; the language usage test issued from an examination of courses of study and an investigation into the errors commonly made by pupils; for the literature test items were selected on the basis of recent studies of children's interests in literature and courses of study in literature; the history test depends upon an analysis of five widely used texts, the questions being so phrased that they may test reasoning in history rather than a mere memory of historical facts; the geography tests were formed in the same way and with the same purpose, the authors ([21]) aiming "to test reasoning, to avoid the purely factual type of question, to give adequate stress to the geography of other countries than the United States, and to cover all the important phases of the subject—industries, economic conditions, geographical principles, climate, mathematical geography, etc." The whole examination requires a working time of about three hours for the seeing, ordinarily divided into two sittings, and would require from two to three times this allowance for the blind because of their slower reading and recording of answers; but if the tests were spread out through a week they might be no greater burden than

an ordinary series of tests in the same subjects. As five equivalent forms of this standard examination have already been issued, the braille material used in June one year, might be used for review purposes the year after; and by preserving records, the attainments of eighth grade classes in successive years might be determined and local standards set.

What do blind children know? Specialized tests of practical information have not been widely used with the blind, but where they have been tried we find, besides the confusions and misunderstandings observed in seeing children, various special mistakes and difficulties due to the handicap of blindness. In general, standardized tests of school achievement show just about the degree of inferiority to the seeing which one would expect from their grade retardation. In special lines, like the development of vocabulary([14]), an even greater deficiency is shown.

This article recommends a more extended use of standard tests of information and achievement to give an annual check-up on progress in the lowest grades by means of the Sangren Information Tests([23]), through the elementary school by the use of the Stanford Achievement Tests([12]), at completion of elementary work by the Otis-Orleans Standard Graduation Examination([21]) and in the high school by the Sones-Harry High School Achievement Test([25]). The results of this testing should show where there is the greatest need for enriching and supplementing the school and life education of blind children.

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(*Continued on page 32*)

Dr. Allen Says:

ON THE INTERMARRIAGE OF THE BLIND

A YOUNG WOMAN studying the education of the handicapped at Teachers College, New York, asked me, after the lecture on Perkins Institution, why we Bostonians had been so unkind as to keep our boys and girls apart even in the classroom.

"There are several reasons," I replied. "First, since most of these pupils were promising educationally and we wished to free adolescents from extra rules and supervision which accompany coeducation at boarding schools, we encouraged their meeting boys and girls among the seeing. We also wanted to have small classes; ten or twelve blind pupils being enough for one teacher. Second, and of more fundamental importance, we recognized the economic-eugenic situation involved. Because our pupils were blind and therefore would generally be squeezed out of the normal employments which would enable many of them to make good, we realize that they belonged to the least well-off of the physically handicapped groups. Were this not the case why should we have today permanent commissions for the blind and none for the deaf, the cardiac, the crippled, and the tubercular?

Yes, blind youth, however intelligent and well-trained, find themselves after graduation in a world prepared by the seeing and for the seeing; and wherever the blind individual does get on there, it is either because he has no one dependent upon him or because he has married a seeing helpmeet. Now, intermarriage with a blind partner makes failure practically certain for both. It is for this reason that their understanding friends denounce such marriages. Many a blind person has said to me: "There must be some windows in the family house." Both Perkins and Overbrook Alumnae Associations have a rule expelling any member guilty of marrying a blind man. How vividly I recall hearing the director of the after-care scheme for the blind in Saxony say that whenever two of his charges intermarried he dropped them as hopeless dependents.

So much for the economic side. As for the eugenic—real students of social pathology, such as our first director was, realize that the blind, *as a class,* belong to that considerable family inheriting and likely to transmit weaknesses or insufficiencies which appear sometimes as blindness, sometimes as deafness, or as some other inborn bodily handicap. Now, if a member of this inclusive family intermarries with another member, the offspring are much more likely to be defective than if he marries some one who is sound and well; hence, argues the eugenist, unless he marries a partner with a history of unquestionable health he should not marry at all.

The second director of Perkins also understood that education is one of the social sciences. Therefore, he too kept his boys and girls from meeting, even opening and closing their schools on different days, that they should not get acquainted on the trains.

As for me, the third director, my re-reading of the Perkins reports and my studies of the pedigrees and careers of the Pennsylvania pupils showed me that as an educator of blind youth I too had incurred special responsibilities to society which forbade my inviting at Watertown the risks of co-education. I recall only too well, and with shame, seeing blind couples with their babies street-begging in Philadelphia every Christmas and reaping an unearned harvest of metallic pity.

That most of our superintendents follow the co-educational plan of the public schools which, mark you, are not residential, does not mean that they all do so from choice or from conviction, or solely because it is cheapest. Doubtless many merely continued the system they inherited; and it is not improbable that the political appointees from alien fields had no convictions on the subject.

A Socialization Program at the Michigan School for the Blind

Josef G. Cauffman

As only well-rounded personalities make it possible for individuals to live normal lives, the Michigan School for the Blind for the past few years has undertaken a comprehensive socialization program. It is planned so as to extend the institutional environment on four frontiers: physical, social, intellectual, and spiritual. As a complete discussion of all four phases would be impossibly long for the *Forum,* and because a great part of the program is still experimental and in a state of flux, this discussion will be confined to a few of the more obvious features in the first and second fields.

Owing to the overlapping in these fields, a great measure of success has been achieved by the united efforts of the teachers and the able supervision of the physical director.

First, a survey of individual needs was made by teachers and physicians and a careful corrective program of physical education set up. "Blindisms" were listed and a program to eliminate them undertaken. Games of all types were collected and taught. Dancing, both athletic and social, was included in the schedule.

Because experience had proved a teacher-initiated program to be a poor thing, barren of results, a pupil-initiated and conducted program was sought. The Michigan School for the Blind Hi-Y group proved responsive to the hint dropped by the adviser and a committee working with the physical education instructors drew up the following schedules which illustrate the plan in general.

During the fall and spring the hour from six to seven is used for out-of-door games and exercise. A twilight baseball league keeps boys and girls alike interested and in the open. In the fall football is added and in the winter skating and tobogganing fill in the time. Reading to the pupils, either by the teachers or by means of the Talking Book, takes care of some of the doubly handicapped. Participation in an activity is not compulsory except as the members of the groups them-

EVENING SCHEDULE "A"

5:30-6:00—Dinner

6:00-7:00—Outdoor activities, (Sept., Oct., April, May)
Reading hour, (Nov., Dec., Jan., Feb., March)

7:00-8:00—Clubs and entertainments

8:00-9:00—Supervised study at school

9:00-9:30—Radio period, (Mon., Tues., Wed., Thurs.)

EVENING SCHEDULE "B"
(for the week)
7:00-8:00

Monday	Scout meetings—boys, girls, & cubs, (meetings may last until 9:00)
Tuesday	Girl Reserve meetings, Hi-Y meetings, (meetings may last until 9:00)
Wednesday	Hobby groups, (sponsored by students, supervised by college students and teachers)
Thursday	Musicals, concerts, etc., (may last until 10:00)
Friday	Informal games, patrol meets, etc.
Saturday	Dancing or class parties, (from 7:00-10:00)
Sunday	Light lunch at 7:00

selves set up attendance requirements. However, ninety-five per cent of the students are in regular attendance at some activity of their choice. The guidance program of each student provides for his social development, and his progress with the group is carefully recorded by the social worker, care being taken to keep secret the fact that the activity is being supervised for fear that the pupils will lose interest.

The members of the faculty respect the schedule and because there have been very few interruptions of the program interest has been kept at a high pitch. There is a certain amount of elasticity in the schedule, a give and take, that takes care of any difficulty which may arise.

On Fridays many of the pupils leave for the week-end so the program is lightened accordingly. On that evening "rubbers" are played off, championships are decided, and pupils are free to accept invitations in the city. Saturday and Sunday evenings are left free for the same reason.

The out-of-door program which should feature the daytime over the week-end, will provide outlets for surplus energy so that the evenings will be as quiet as could be desired. But the out-of-door program is not left to chance. It could be with seeing children, but if true normality of understanding is desired, the blind must be taught correct methods of play. Therefore, a careful plan is used on the M.S.B. campus. The week-end duties are rotated and a few of the older partially sighted boys and girls assist the teacher. The special teacher is thus led into play contacts with the pupils in a healthful way. It is of great value to teacher and pupil alike to be able to meet on a ground of pupil interest.

In the dining room it has proved very much worth while to seat intermediate boys and girls together at small tables accommodating six pupils. There a girl acts as hostess and a boy as host. Plates are properly filled and students are served by their fellows. A supervising housemother is ready with a helping hand if necessary, and a weekly meeting of hostesses with the home economics teachers gives additional help. A careful rotation of pupils bi-monthly gives everyone a chance to be host or hostess and prevents "unhappy combinations" resulting in attachments. Manners have improved wonderfully and the pupils enjoy their responsibilities when called upon to assume them.

No effort is made to segregate boys and girls other than dormitories require, and the results over a four-year period fully justify the faith of the faculty. There have been no unfortunate results to date and boys are not so fond of the blind girls once they become acquainted as they were prior to the initiation of this socialization program. The success of the whole plan has been due to three factors: first, loyal, cooperative, progressive teachers; second, an enlightened professional board of education; and third, grateful, happy boys and girls who have justified the confidence of the faculty.

(*Continued from page 29*)

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Report of the Committee on Teacher Certification

EDITOR'S NOTE: *It seems probable that many of our readers who are teachers in schools for the blind may not have copies of the Proceedings of the A. A. I. B. Convention and will be interested in the following report of the committee on the certification of teachers. Editorial license has been used in changing a few words which do not in any way affect the meaning.*

IN connection with the matter of certification standards for teachers in schools for the blind, certain more or less general considerations seem pertinent, which are offered as underlying the specific plan outlined:

1. The principal objective in the matter of the certification of teachers of the blind is the improvement of service rendered to the blind boys and girls of America.

2. The plan is not retroactive. Teachers now in service would be continued in service is the thought of the committee.

3. The incidence of the plan should be non-legal and leave to states and other governmental units the matter of legal requirements. Both from the side of the teacher and the executive officer of the school for the blind this plan or any such plan should be a voluntary matter, looking to better schools and better service. The plan should offer a definite goal and lead the way.

4. Even though several teachers may not meet the standards set, standards by which improvement may be attained must be ahead of present practice. The plan for certification should serve as a very strong incentive to encourage teachers to improve themselves professionally.

The requirements proposed, and classes of certificates are as follows:

Class C Certificate (academic, vocational or music).

Teachers would be eligible for Class C Certificates who have presented to the Committee on Teacher Certification evidence of completion of the following:

1. Graduation from an accredited high school maintaining a four-year course.

2. A special training course for teaching the blind, including the equivalent of two and one-half semester hours of "education."

3. At least one year of teachers college or general college work (30 semester hours), including courses known as principles of educational psychology, and the psychology of special subjects (or exceptional children).

Alternative, or "in lieu" requirements:

4. Four years of teaching experience may be substituted for the one-year special training course if the teacher is given a rating of "good," or better, by his or her superior.

5. Four years of trade experience may be substituted for the one-year special training course, if it conforms closely in its nature with subjects taught in schools for the blind (vocational certificate).

6. One year of trade school work above the high school level may be substituted for the college work under (2), or (3) above, provided courses in principles of education and psychology of education are included (vocational certificate).

7. Four years of conservatory work in music may be substituted for the one-year special training course under (2) above and for the college work under (3) above, provided that courses in the principles of education and educational psychology have been included (music certificate).

8. One or more years of work in "apprenticeship training" or practice teaching, pursued in a school for the blind may be offered in lieu of the training referred to under (2) above. This training shall be pursued under the direction and supervision of officials approved by the committee on teacher certification of the A. A. I. B.

Class B Certificate (academic, vocational or music).

To be eligible for a Class B certificate a teacher must be able to qualify for a Class C certificate and in addition should successfully meet the following requirements:

9. At least two years (60 semester hours) of teachers college or general college work, with at least fifteen hours of "education" or "psychology," including courses in principles of education, and in the psychology of special subjects or exceptional children, and the history of education.

10. Two years of successful teaching experience with a rating by a qualified supervisor of "very good" or three years of experience with a rating of at least "good."

Alternative requirements:

11. Four years of trade experience may be substituted for one of the years of teachers college or general college work, if it closely conforms in its nature with subjects taught in schools for the blind (vocational certificate).

12. Three additional years of teaching experience may be substituted for one of the years of teachers college or general college work (music certificate).

Class A Certificate (academic, vocational or music).

To be eligible for a Class A certificate a teacher must be able to qualify for a Class C and Class B certificate and in addition should successfully meet the following requirements:

13. Hold a degree from a standard four-year teachers' college or general college, with at least thirty semester hours of "education" or "psychology" and tests and measurements.

14. Four years of teaching experience with a rating of "very good," by a qualified supervisor, or six years of teaching experience with a rating of "good."

Alternative requirements:

15. Four years of trade experience may be substituted for two years of teaching experience rated "very good" or better, if it conforms closely in its nature with subjects taught in schools for the blind (vocational certificate).

16. The completion of a four-year course in music in a standard university or conservatory of music may be substituted for three years of general college work provided twenty-four semester hours of work in "education" has been taken (music certificate).

In order to initiate the certification plan herein recommended your committee recommends:

1. That the President of the A. A. I. B. appoint a committee of three "heads of schools for the blind" (superintendents or principals) to serve as a permanent committee on certification.

a. Members to serve for a six-year term except that in the case of the first appointments, one would be for a two-year term and another for a four-year term.

b. That this permanent certification committee be empowered to proceed to put this plan into operation as rapidly as is feasible and further empowered to make such adjustments of plan or policy in matters of certification as seems to them necessary for its successful operation.

2. That because of the desirability of a permanent location for records and files, the certification committee consider negotiating with the American Foundation for the Blind as to the possibility of the Foundation rendering the service of a non-voting secretariat.

3. That an application fee of one dollar ($1.00) be collected from each applicant to defray a part of the expenses incidental to certification.

4. That a copy of this report be referred to the committee on resolutions for immediate action.

Respectfully submitted,
MRS. ELSIE WALTON
NEAL QUIMBY
HAROLD W. WRIGHT
S. M. WHINERY, *Chairman*

Report accepted by section of Superintendents and Principals, June 28, 1938.

EBER L. PALMER, *Chairman*

DIRECTORY OF PERIODICALS
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Building a Prereading Vocabulary for Small Blind Children

KATHRYN E. MAXFIELD, PH.D.

INTRODUCTION

A FEW YEARS AGO the Arthur Sunshine Home and Nursery School for the Blind was faced with the problem of giving to a group of normal but experientially limited children as rich a background of meaningful vocabulary as possible within a period of a few months. The unsatisfactory results of the efforts to prepare these boys and girls in a hurry for their beginning braille reading pointed to the importance of an activity program for the nursery school which would familiarize the children with words having a high degree of frequency in brailled primers and first readers. It also indicated the importance of building up in the child's mind an adequate relationship between objects and facts in his everyday experience and the words which stand for them. Acquiring the technique of reading braille is hard enough for a little child without his having to struggle with a text in which even the most frequently repeated words may be meaningless to him.

Before an adequate activity program could be developed, however, it was necessary to find out what words appeared with a high degree of repetition in primers and first readers which had been brailled. Also, it was necessary to study some authorized word list or lists, having in mind words with special significance for blind children.

After consultations with a number of teachers of blind beginners, those books were chosen for vocabulary analyses which were used most generally in the public school braille classes and the residential schools for the blind to which New Jersey children were most likely to go upon entering the first grade.*

There were two reasons for this somewhat arbitrary method of choosing the books: First, it was financially impossible for us to have the clerical assistance which would have been required to make a word analysis of all brailled primers and first readers; and second, if we had decided to pick only those books which were most recent or which seemed best to us, we should not have been certain that they were the most widely used in schools and classes for the blind.

In the two residential schools and four braille class departments from which information about books was obtained, it was found that a wide variety were in use. Only those have been included in this study which were listed three or four times. Mention should be made of the fact that the books were chosen nearly three and a half years ago and may not be the most generally used now.

Whatever list might be compiled from these books we planned to supplement with other words which have been found of particular value to blind children or which occurred with a high degree of frequency in some authoritative word list.

During the last three and a half years this investigation has progressed slowly, first one member then another of the research and administrative staff devoting to it whatever time could be spared.**

---

* Thanks for their cooperation are due to the teachers of beginning reading in the following schools and classes: the Braille Class Departments in Jersey City, Elizabeth, Paterson, and Newark; the Pennsylvania Institution for the Instruction of the Blind, in Philadelphia; and the New York Institute for the Education of the Blind, in New York City.

For information on the comparative content of some of the braille and inkprint editions, we are grateful to the American Printing House for the Blind, Louisville, Kentucky.

** Contributors to this study have been: Mrs. Wilma Potts Gill, Mrs. Mabel Pottinger Baum, Mrs. Marie Ballentine, Dr. Harriett Fjeld, and the Misses Helen Horine, Janet Ivins, Helen Scherer, Gertrude Meyers, Rose Robertson, and Miriam Reed.

Objective

Our general aim has been to compile a list of a few hundred words the recognition and understanding of which would facilitate the blind child's acquisition of braille reading techniques. Unless the child's first braille books have interest and meaning for him his reading skill will suffer, his desire to read will evaporate, and he will develop an unfortunate emotional set against reading.

It had been our intention, when this study was completed, to build activity units which would give the children concrete experience with as many of the listed words as possible. However, the sudden closing of the Home's residential unit has made this impossible. With such activity units in mind, the vocabularies of the books have been analyzed with regard to the following points:

1. Total number of running words, total number of different words, and the frequency of occurrence of new words for each book and for all the books.
2. Frequency of each word in each book and in all the books.
3. List of all words arranged according to their frequencies for all the books.
   a. Occurrence of these words in a general vocabulary list for young children.
4. Compilation of preliminary Arthur Home list from preceding list.
   a. Excluding proper names, such as *Sleepy Head* and *Polly,* and other words which do not seem to be of general value, such as *ox* and *stile.*
5. Compilation of accessory list of words occurring with high frequency in the general vocabulary list but not having high frequency in the books.
   a. Words to be chosen on the basis of probable usefulness to blind children.
6. Consideration of the visual terms in the books and in the word list, with regard to their frequency and their comprehensibility by the blind.
7. The addition of words not in the book list but having high frequency in the standard word list or having special significance for the blind.
8. Presentation of the Arthur Home vocabulary list.

Materials

The books chosen for study were:

Pathway to Reading: *Primer, First Reader*
Coleman, Uhl & Hosic. Silver, Burdett. 1925. Brailled in 1928 by American Printing House for the Blind and by Howe Memorial Press.

Winston Readers: *Primer, First Reader*
Firman & Maltby. Winston. 1920. Brailled in 1926 by APH and in 1929 by HMP.

Everyday Classics: *Primer, First Reader*
Baker, Dunn & Thorndike. Macmillan. 1922. Brailled in 1928 by APH.

Elson Basic Readers: *Primer, First Reader*
Elson, Runkel & Gray. Scott, Foresman. 1930. Brailled in 1931 by APH.

Beacon Readers: *Primer, First Reader*
Fassett. Ginn. 1912 & 1913. Brailled in 1932 by APH.

Child's Own Way Series: *Wag and Puff*
Hardy. Wheeler. 1926. Brailled in 1928 by APH & HMP.

In this investigation *Wag and Puff* has been classed among the first readers for two reasons, both of which seemed good to us but neither of which may appeal to anyone else. First of all, the punctuation in this edition of the book offers complications for beginning finger readers which may easily distract the child from the main business of finding meaning in the printed page. In the second place, the vocabulary seemed to have more in common with that of the first readers than of the primers in this study. The rough count showed that the words used in *Wag and Puff* occurred almost twice as often in the five first readers analyzed as in the five primers of the same series. There were approximately three times as many words in *Wag and Puff* which did not appear at all in the primers as there were words which did not appear in the first readers. Most of the *Wag and Puff* words which were not to be found in the five first readers were not in the primers either. Among the approximately forty words peculiar to *Wag and Puff* are such words as *birdhouse, downstairs, horsehair,* and *stretched;* a few words which appear in other forms in some of the other books; and a few nouns, such as *Puff, Sally, pumpkins, tongue,* which might have equal worth in either a primer or a first reader.

All of the books have been brailled quite literally according to the original texts, the chief exception being the elimination of the phonic word lists in the *Beacon Primer*. Since these lists were not in the braille they have not been included in the word count. However, the long word list at the end of the *Beacon First Reader* is in the braille edition and has been included in the word count since it is meant to be used for a review by the children. The word lists at the ends of some of the other books do not seem to be treated as part of the text and have been omitted from the word count, even though they are in the braille editions.

The general word list against which the vocabulary compiled from these books is checked, is that prepared by the International Kindergarten Union in 1928, and is called a "Study of the Vocabulary of Children Before Entering First Grade"(10). This list, which is now distributed by the Association for Childhood Education, will be referred to hereafter as the IKU List. It is compiled from three sources: words children used while attending kindergarten, when stimulated by pictures, and when at home. The Kindergarten List was used as the key list, and in separate columns the placement of each word in the Kindergarten List is also shown in the Picture and Home Lists. The former list which contains 2,596 words, is the one used in this investigation.

For the sake of clarity, the method of tabulation in the IKU List is quoted verbatim, since the same method was followed in obtaining the word count for the eleven books in this study; (IKU List, p. 5.)

Sentences and phrases used by children were recorded. From these records the occurrence of each word every time it was used was obtained. A word was determined to be such if so called in Webster's International Dictionary, 1925 edition. Proper nouns found in the "Biographical Dictionary" and in "A Pronouncing Gazetteer" of this same edition were called words. The following were also called words:

1. Two or more words which represent one concept in the child's mind, though not in Webster's Dictionary as such, as "down town," "false face," "kiddie kar," and "bean bag."
2. Children's words, as "choo."
3. Proper names of more than personal interest as found in the dictionary, as "Humpty Dumpty."
4. Slang, as "gee."
5. Inflections of nouns, verbs, pronouns, and adjectives.
6. Contractions, as "I'd" and "we'll."
7. Commercial words that have not found their way into this dictionary, as "jello" and "Victrola."
8. Colloquialisms, as "mhm."

Inflections were tabulated separately because the chairman decided that each inflection meant a shift of some kind in the child's mind. Words once put together could never be separated, but if listed separately could be combined as one chose.

The committee regrets that the parts of speech of each word and the different meanings for the same word can not be given. This proved impossible with the small amount of widely distributed help used in tabulating.

When our study was initiated it seemed important to consider the fact that each inflection of a word might mean "a shift of some kind in the child's mind." Now, however, in spite of the probable truth of this assumption, the conclusion has been reached that the shift is not important enough to justify a vocabulary list for use with blind preschool and kindergarten children which emphasizes word forms rather than root meanings. Any vocabulary work with blind children is bound to be tedious and the simpler the word list which is used the better. For further work of this sort the Gates "Reading Vocabulary for the Primary Grades" in its present form would be less cumbersome and probably quite as useful (6).

In the kindergarten column of the IKU List is given the total frequency of occur-

TABLE I

TOTAL NUMBER OF RUNNING WORDS, TOTAL NUMBER OF DIFFERENT WORDS, FREQUENCY OF OCCURRENCE OF NEW WORDS

BOOKS	Run. Wds. Total	Dif. Wds. Total	Occurrence of New Wds.
A. Primers			
Pathway to Reading	5244	337	1 in 15.6
Everyday Classics	4581	352	1 in 13.0
Elson	5227	272	1 in 19.2
Beacon	7250	740	1 in 9.8
Winston	3550	327	1 in 10.9
B. First Readers			
Pathway to Reading	6625	672	1 in 9.9
Everyday Classics	9005	1044	1 in 8.6
Elson	10,532	626	1 in 16.8
Beacon	11,196	2257	1 in 5.0
Winston	5055	637	1 in 7.9
Wag and Puff	5199	441	1 in 11.8

rence of each word. In placing the 2,596 words, the same method was used in establishing the order of frequency for the words as was used by Dr. Thorndike and Dr. Horn. That is: (IKU List, p. 8)

1. The first number gives the thousand in which the word occurs. Since this list has only 2,596 words, only three thousands are indicated. The letter tells whether a word occurs in the first or second 500 of any thousand; "a" representing the first 500 and "b" the second 500 in any thousand.
2. The second number indicates the hundred of the 500 in which any word occurs. This is given only for the first 500 and the first 1,000.

Hockett has shown that the vocabulary load of primary readers has decreased markedly in recent years (5). Using much the same definition for a word as that used in the IKU List, he found that sixteen primers published from 1920-1929 inclusive contained an average of 335 different words, seventeen appearing from 1930-1935 averaged 271 words, and nine published in 1935-1936 had an average of 226 words. Thirteen first readers appearing from 1920-1929 contained an average of 645 words, fifteen issued from 1930-1935 averaged 540, and eight published in 1935 and 1936 had an average of 481 words.

A glance at Table I will show that the books chosen by us for study have large vocabulary burdens. Other books were being used in all the schools and classes from whose reading lists we made our choice, and it is likely that some of the books were more up-to-date and contained fewer words. However, it will be recalled that these particular books have been studied because of the fact that they were the most generally used in these schools and classes.

According to Gates, the typical reader has a new word for about every fifteen running words (6). This, he thinks, is a heavy vocabulary burden even for the brightest pupils. If this is true for seeing children it would seem to be at least as true for children who do not see. Blind children are less likely to have the ideas to match all the words they encounter on the printed page. Also, it seems likely that braille is a more difficult technique for a blind beginner to acquire than inkprint reading is for the seeing beginner.

Many of these books in Table I contain too few repetitions although most of the primers compare favorably with the majority of those used by the seeing. Gates suggests

one new word in every 30 or 40 running words of text, for seeing children (6). Our belief is that this would be an excellent suggestion to follow with blind children, at least until their braille mechanics have been established. It is important for the reading fingers to become thoroughly familiar with the configurations of words and phrases as they are presented to them without having to encounter a number of new ideas and new braille patterns too soon.

Reference to Table I will show a surprising diversity among the books with regard to their lengths, the number of different words presented to the child, and the frequency of occurrence of new words. For instance, the Beacon Primer has more than twice as many words as the Winston Primer. Yet, the frequency of occurrence of new words is not very different in the two books since there is approximately one new word for every 10 in the Beacon Primer and one in every 11 in the Winston.

On the whole, other factors being equal, the number of repetitions per word in a book would seem to be more indicative of its value for braille class teaching than its length.

When the decision as to *what is a word* is based on the policy followed in the IKU List, there are found to be approximately 3,500 words in all of the books. The five primers contain more than 1,100 words although many of these words are simply different word forms of the same word. Table II gives all of the 3,500 words in alphabetical order, with the frequencies for each word in each book, in all the primers, in all the first readers, and in all of the books together.*

After careful inspection of this table it was decided that the most useful list, for our purposes, would be one which included the words having the highest frequencies for *all* of the books.

The words having the highest frequencies were arranged in order from the word *the* with a total frequency of 5,329, to the word *yet* which is the last of a series of words having a frequency of 7. Words showing a frequency of less than 7 were so obviously not important for our list that they were dropped from further consideration. Table III.*

* Tables II and III are not printed here because of their bulk.

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(This article will be continued in the January *Forum*.)

The Teachers Forum

for

Instructors of Blind Children

Address all communications to

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American Foundation for the Blind

15 West 16th Street

New York, New York

The Editor will not be responsible for opinions expressed in signed articles

NOVEMBER, 1938

THE report of the proceedings of the thirty-fourth biennial convention of the American Association of Instructors of the Blind, which has just been received, is a mine of information and can be used very profitably by superintendents and principals in their teachers' meetings during the next two years. Comments upon outstanding addresses would be superfluous and presumptuous.

One matter which should be of interest to all teachers in schools for the blind is the action which was taken in regard to the certification of teachers. The report of the committee which is reprinted elsewhere in this issue was first approved by the superinten-

dents and principals in their sectional meeting and then by all of the delegates when they accepted the report of the Resolutions Committee.

This subject was brought to the attention of the Association by the present editor of the *Forum* at the convention held in St. Louis, in 1934, and his discussion of it may be found on pages 207-211 of the 1934 Proceedings. Two different committees have considered the matter during the two bienniums since that time and a definite arrangement has now been made whereby teachers may be certified.

The president of the Association, Superintendent Ganey, is very much interested and is appointing a committee to put the plan into execution. As soon as this committee has had an opportunity to outline the necessary procedure and adopt standard forms, it should be possible for teachers to make application and obtain the certification to which they are entitled.

It is to be hoped that those who are not already eligible for the highest grade of certification will endeavor to meet its requirements as soon as possible and that the superintendents of our schools for the blind will encourage all of their teachers to become certified. A somewhat similar plan has done much to professionalize the teaching of the deaf and should attain the same results in the field of the education of the blind.

In the March, 1938 issue of *The Teachers Forum* the names of teachers in residential schools and day school classes for the blind were listed, together with the schools in which they are employed and the subjects or grades which they teach. It is thought that this information is of considerable value and that it should be compiled each year. A number of persons wrote expressing their appreciation for this information, but others thought that the space might better be devoted to other material. As the project involves considerable labor and expense, the editor would like to hear from all of you who wish this plan to be continued. Since it would cost too much to have a separate pamphlet printed, the data would probably be included in an enlarged issue of the *Forum*. The March issue consisted of thirty-two pages instead of the regular twenty.

The members of the Foundation staff are eager to learn how their sightless friends throughout the country liked the recent report of Foundation activities. As most of you know, this was recorded in the form of a Talking Booklet of one record and many who have had no way of learning about the various things which the Foundation has done for the blind now have an opportunity to do so. Several hundred copies of this report have been distributed among the libraries which have departments for the blind, and may be borrowed in the same way in which other Talking Books are obtained. Librarians may place this record in a container with some other book so that it may be sent through the mail without danger of breakage. It is hoped that all Talking Book readers will have access to it promptly and that they may enjoy and appreciate it. Suggestions from readers of the *Forum* regarding this method of making reports will be appreciated.

Our Contributors

Dr. Samuel P. Hayes, Professor of Psychology at Mt. Holyoke College, is consulting psychologist for the American Foundation for the Blind.

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New Year Meditations and Resolutions of a Teacher of the Blind

Clarence R. Athearn, Ph.D.

AS THE NEW YEAR brings its challenge of time and change, it is natural to remind ourselves of the permanent principles which sustain and direct our work.

WE BELIEVE that this our school has been established by great-hearted founders as an oasis of love amidst the desert hates of a warring world.

LET US RESOLVE that no sacrifice is too great to maintain its harmonious spirit, and to extend its influence of goodwill to be a blessing to this community and to humanity.

WE BELIEVE that love never attempts to monopolize the bread of life nor the means of instruction in order to enhance her own prestige or secure her own advancement.

LET US RESOLVE to cooperate in the sharing of opportunities, in the constructive interchange of helpful ideas and experiences: to share with others ways and means of making teaching more effective; and thereby contribute to the cause of abundant learning and living in our school.

WE BELIEVE that love knows neither envy nor jealousy of other teachers, refrains from captious criticism, does not brood over slights: love is herself teachable, is not boastful of success, seeks not to exploit the child for personal prestige.

LET US RESOLVE to scorn mean personalities and petty jealousies, to be generous with wholehearted commendation, to rejoice in the success of each as the success of all.

WE BELIEVE that love suffers patiently and is kind, does not indulge in idle gossip nor circulate evil insinuations or unfounded rumors.

LET US RESOLVE that we will do all in our power to safeguard the reputations of one another, to promote mutual faith and goodwill, and to express more frequently sincere sentiments of hearty appreciation.

WE BELIEVE that the personal comradeship of teachers and pupils is the most essential and dynamic factor in the education of human beings.

LET US RESOLVE to become better acquainted with the social problems of each child, to safeguard our pupils from failures by keeping in close personal touch with their needs, to be alert to foresee crises in young people's lives, meet them with counsel and encouragement, and thus be a positive factor in multiplying human values for good through comradeship.

WE BELIEVE in humanity, and in every child as a bearer of the ideal of humanity and an irreplaceable entity in the immortal community of the beloved.

LET US RESOLVE to make every effort to understand the special problems of each child; to be diligent in cultivating the highest standards, good habits, and right attitudes toward conduct; to give each child the right help at the right time; to be unconquerable in our devotion to each child's needs and progress.

WE BELIEVE in God the Father Almighty, and in the unseen world of eternal values whereof our sense world is but the bounding shore.

LET US RESOLVE to practice living in that eternal world *now*.

Building a Prereading Vocabulary for Small Blind Children

KATHRYN E. MAXFIELD, PH.D.

(*Continued from the November* FORUM)

TABLE III thus gives us approximately 1,020 words from which to build our preliminary word list. All the words in this table which occur among the first 500 of the IKU List were included in our preliminary Arthur Home list. Those words in Table III were also included which occurred both in the first 500 of the Gates 1935 List and in the first three levels of the Stone "Graded Vocabulary for Primary Reading" even when these words were not in the IKU List (9).

Table IV shows the number of words in these primers and readers which do not occur in the IKU List.

he will acquire the others with reasonable ease so long as the forms are not radically different. Table V.*

A few words in this preliminary list were omitted from succeeding drafts because the extremely high frequency of their occurrence practically guarantees their being known by any educable blind child by the time he reaches school age. The words *a, and, the,* and *to* occurred well over a thousand times in the seven books together, and in the IKU List all of them had extremely high frequencies. The three pronouns *he, I,* and *you* have been kept despite their very high frequencies because they have been found troublesome to the three-, four-, and five-year-old blind children. *Little* is retained because there is a possibility that its comparative implications may not be grasped even when the word itself is used constantly. *Said* does not have such a high frequency in the IKU List as in the book list and for that reason is kept.

TABLE IV

NUMBER OF BOOK WORDS IN FIRST 500 OF IKU LIST AND NUMBER NOT IN LIST

BOOKS	Wds. in First 500 of IKU List			Wds. not Included in IKU List		
	Dif. Wds.	Total Frequency	Proper Nouns	Frequency	Other Wds.	Frequency
A. Primers						
Pathway to Reading	188	3746	40	478	21	163
Everyday Classics	187	3663	41	314	24	77
Elson	178	4391	46	459	4	37
Beacon	306	5702	37	402	107	234
Winston	183	2712	23	204	25	104
B. First Readers						
Pathway to Reading	311	5139	60	377	73	236
Everyday Classics	358	6641	70	302	220	615
Elson	315	8531	85	574	41	198
Beacon	366	6722	89	439	1152	1897
Winston	274	3816	44	246	99	235
Wag and Puff	251	4147	15	320	39	120

The first draft of the Arthur Home list contains 514 words some of which are different forms with the same root, as, for instance, *cried, cries, cry, crying*. In succeeding drafts of this List many of these forms have been combined thus: *cry* (*ied, ies*), *crying*. The chances seem reasonable that if a child learns one form in general life experience

* Table V is not given here because of its bulk.

The longer we have worked over this study the more we have been impressed by the importance of having our final word list represent primarily the concepts which blind children need in order to acquire an understanding of strange words which may occur in their reading. That is, our point of view has shifted somewhat from placing the emphasis on the words actually occurring in the books to those words which are basic to a rapid acquisition of other less familiar words. Consequently, a much larger number of words has been added to the book word list than had been planned originally. This accessory list contains 192 words. Some of them, however, are color terms and a few others call for vision if a usable concept of them is to be formed, i. e., *sky, moon.* Table VI.*

In compiling the second draft of the Arthur Home word list from the preliminary draft and the accessory list the following changes in procedure were made: Table VII.*

1. Singulars and plurals were combined except where striking differences exist in written or oral forms, i. e., (1) *cat* (*s*), (2) *child,* (3) *children.*
2. Inflections of the same verb were combined as a rule, i. e., (1) *cry* (*cries, cried*), (2) *crying.*
3. All articles were eliminated, as were exclamations and slang, i. e., (1) *hello,* (2) *hey,* (3) *kid.*
4. Color words were eliminated, as were a few others, an understanding of which calls for sight or for greater maturity, i. e., (1) *moon,* (2) *sky.*

One of our original interests in making this study lay in discovering whether the books contained so many visual words that a true comprehension of the stories would be impossible for totally blind beginners. This proved to be not as serious a problem as had been anticipated, but even so we feel that it would be better if totally blind beginners could have their first reading experience with material which does not use visual terms in ways in which blind children cannot understand them. Many teachers prepare their own braille material for the first lessons and definitely avoid visual terms. Blind children must soon learn to accept visual ideas in reading but it would seem wiser not to combine the learning of a difficult technique, such as braille reading, with the presentation of words that can have no value on the printed page to the blind beginner. For instance, the word *see* is often used in such a manner as to be entirely comprehensible to the blind child. In such cases *see* stands for the concept of "becoming acquainted with," something which can be heard or felt by the blind child and therefore understood by him. This is a generally accepted use of the word *see* among the blind. When the story refers to "seeing the cow" the text can have meaning to the small blind child because he can actually have had experience with a cow. When it refers to "seeing the sky" or "seeing the clouds" it can have little meaning to him. Also, when these visual terms refer to pictures accompanying the text they are likely to confuse the child who does not see.

For each of these books a list of the visual terms was prepared and an attempt was made to judge whether or not they could have meaning to a totally blind reader, in terms of the manner in which they occurred in the text. From Table VIII it will be seen that the percentage of incomprehensible visual terms to the total number of running words is surprisingly small. It is small enough so that for the large percentage of children in schools and classes for the blind who have a small amount of vision, they should present no reading difficulty. To the totally blind children, one of these words occurring in a crucial position might prove to be a real stumbling block.

The final and complete Arthur Home Vocabulary List is given in Table IX. In this

* Tables VI and VII are not given here.

TABLE VIII

OCCURRENCE OF COMPREHENSIBLE AND NONCOMPREHENSIBLE VISUAL TERMS OCCURRING IN THE BOOKS

BOOKS	Total Word Count	Visual Terms: Number Incomprehensible	Visual Terms: Number Possibly Meaningful	Visual Terms: Number Meaningful
A. Primers				
Pathway to Reading	5244	118	22	5
Everyday Classics	4581	44	28	0
Elson	5227	67	56	7
Beacon	7250	136	173	4
Winston	3550	1	22	4
B. First Readers				
Pathway to Reading	6625	142	56	13
Everyday Classics	9005	71	39	8
Elson	10532	168	51	22
*Beacon	11196	100	10	6
Winston	5055	58	31	3
Wag and Puff	5199	141	26	17

final draft of the List color words have been omitted and a few words have been added which have specific meaning for children without sight, such as *blind* and *braille*. Color words were omitted from the List after some hesitation on our part because of the fact that so many educationally blind children nevertheless have color perception, and therefore should be taught to know colors. However, it was finally decided to limit the List to words which could be appreciated by the totally blind.

TABLE IX

ARTHUR HOME VOCABULARY LIST

Wd. No.	Word	Wd. No.	Word	Wd. No.	Word	Wd. No.	Word
1	about	30	ball	59	bowl	88	cat (s)
2	across	31	banana	60	bow-wow	89	catch
3	after	32	bark	61	box	90	caught
4	afternoon	33	barn	62	boy (s)	91	chair (s)
5	again	34	bath	63	braille	92	cheese
6	airplane	35	be	64	bread	93	chew
7	all	36	bear	65	break	94	chicken (s)
8	almost	37	beat	66	bridge	95	child
9	alone	38	because	67	bring	96	children
10	along	39	bed (s)	68	broke	97	chimney
11	already	40	been	69	brook	98	chin
12	always	41	before	70	broom	99	choo-choo
13	another	42	begin	71	brother	100	clay
14	any	43	behind	72	build	101	clean
15	anything	44	bell	73	burn	102	climb (ed)
16	apple (s)	45	best	74	but	103	clock
17	are (n't)	46	better	75	butter	104	clothes
18	arm (s)	47	bib	76	buy	105	cluck
19	around	48	big	77	by	106	coat
20	as	49	bird (s)	78	cake	107	cold
21	ask (ed)	50	birthday	79	call (ed)	108	come (s)
22	at	51	bit	80	came	109	coming
23	ate	52	bite	81	can ('t)	110	cook
24	auto	53	blind	82	candy	111	cookies
25	away	54	block (s)	83	cap	112	corn
26	baa-baa	55	board (s)	84	cape	113	could (n't)
27	baby	56	boat	85	car	114	cow (s)
28	back	57	book	86	carrots	115	cracker (s)
29	bag	58	both	87	carry	116	cream

* 31 visual terms occurred in the word list at the end of the reader but did not occur in the text proper.

Wd. No.	Word	Wd. No.	Word	Wd. No.	Word	Wd. No.	Word
117	cry (ied, ies)	186	fly	255	I('d, 'll, 'm, 've)	324	Mr.
118	crying	187	food	256	ice	325	Mrs.
119	cup	188	foot	257	if	326	much
120	cut	189	for	258	in	327	must
121	cute	190	fork	259	inside	328	my
122	day	191	found	260	into	329	nail (s)
123	dear	192	four	261	is (n't)	330	name
124	deep	193	friend (s)	262	it	331	near
125	did (n't)	194	from	263	its	332	neck
126	different	195	front	264	jam	333	need
127	dig	196	full	265	jelly	334	nest
128	dinner	197	fun	266	jump (ed)	335	never
129	dirty	198	funny	267	just	336	new
130	dishes	199	game	268	keep	337	next
131	do	200	garage	269	kick	338	nice
132	does (n't)	201	garden	270	kind	339	night
133	dog (s)	202	gave	271	kite	340	nine
134	doing	203	get (ting)	272	knife	341	no
135	doll (s)	204	girl (s)	273	know	342	noise
136	done	205	give	274	lady	343	nose
137	don't	206	go (es)	275	lake	344	not
138	door	207	goat (s)	276	large	345	nothing
139	down	208	going	277	last	346	now
140	draw	209	gone	278	laugh (ed)	347	nut (s)
141	dress	210	good	279	leaf	348	of
142	drink	211	goodby	280	leaves	349	off
143	drive (s)	212	got	281	leave	350	old
144	drum	213	grandma	282	left	351	on
145	duck	214	grass	283	leg	352	once
146	each	215	great	284	let ('s)	353	one (s)
147	ear (s)	216	ground	285	light	354	only
148	early	217	grow	286	like	355	open
149	eat (s, ing)	218	guess	287	line	356	or
150	egg (s)	219	had	288	little	357	orange
151	eight	220	hair	289	live (s, ed)	358	other
152	else	221	half	290	long	359	ought
153	engine	222	hammer	291	look (s, ed)	360	our
154	enough	223	hand (s)	292	lost	361	out
155	even	224	handle	293	lot (s)	362	outside
156	every	225	hard	294	love	363	over
157	everybody	226	has (n't)	295	lunch	364	own
158	everything	227	hat	296	machine	365	paper
159	eye (s)	228	have (n't)	297	made	366	party
160	face	229	hay	298	make (s)	367	pass
161	fall	230	he	299	making	368	paste
162	far	231	head	300	man	369	penny
163	farm	232	hear	301	many	370	people
164	farmer	233	heard	302	may	371	pepper
165	fast (er)	234	help	303	maybe	372	piano
166	father	235	hen (s)	304	me	373	pick
167	feed	236	her	305	mean	374	pie
168	feel	237	here	306	meat	375	piece
169	feet	238	hide	307	men	376	pig (s)
170	fell	239	high	308	meow	377	place
171	felt	240	hill	309	met	378	plant
172	fill (s, ed)	241	him	310	might	379	plate
173	find	242	his	311	milk	380	play (s, ed)
174	fine	243	hit	312	mine	381	playing
175	finger	244	hold	313	miss	382	please
176	finish (ed)	245	hole (s)	314	Miss	383	pocket
177	fire	246	home	315	mitten (s)	384	pond
178	first	247	honey	316	money	385	porch
179	fish	248	hop (s, ped)	317	moo	386	potato (es)
180	five	249	horn	318	more	387	pretty
181	fix	250	horse (s)	319	morning	388	puddle
182	flag	251	hot	320	mother	389	pull
183	flew	252	house	321	mouse	390	pumpkin
184	floor	253	how	322	mouth	391	put
185	flower (s)	254	hurt	323	move	392	quack

Wd. No.	Word
393	rabbit (s)
394	rain
395	ran
396	rap (ped)
397	read
398	ready
399	real
400	ride
401	right
402	ring
403	rode
404	robin
405	roll
406	room
407	rooster
408	rope
409	rose (s)
410	rough
411	round
412	rug
413	run (s)
414	said
415	salt
416	same
417	sand
418	sang
419	sat
420	saw
421	say (s)
422	school
423	scissors
424	seat
425	see (seen)
426	seed
427	set
428	seven
429	shall
430	sharp
431	she ('s)
432	sheep
433	shoe (s)
434	should
435	show
436	shut
437	sick
438	side
439	sing (s)
440	singing
441	sister
442	sit
443	sitting
444	six
445	skin
446	sled
447	sleep
448	small
449	smooth
450	snow
451	so
452	soft
453	sold
454	some
455	somebody
456	something
457	sometimes
458	song
459	soon
460	soup
461	splash
462	spoon
463	spring
464	squirrel
465	stairs
466	stand
467	start
468	stay
469	step (s)
470	stick
471	stone (s)
472	stool
473	stop (s, ped)
474	store
475	story
476	stove
477	straight
478	straw
479	street
480	string
481	strong
482	sugar
483	suit
484	summer
485	them
486	then
487	there ('s)
488	these
489	they ('re)
490	thing (s)
491	think
492	this
493	those
494	thought
495	three
496	through
497	tick-tock
498	tie
499	time
500	tiny
501	today
502	toe (s)
503	together
504	told
505	tomorrow
506	too
507	took
508	top
509	touch
511	toy (s)
512	train
513	tree (s)
514	truck
515	try
516	turkey
517	turn
518	two
519	under
520	up
521	upon
522	us
523	use
524	very
525	wagon
526	wait
527	walk (s, ed)
528	wall
529	want (s, ed)
530	warm
531	was (n't)
532	wash
533	watch
534	water
535	way
536	we ('ll, 're)
537	wear
538	well
539	went
540	were
541	wet
542	what ('s)
543	wheat
544	when
545	where ('s)
546	which
547	while
548	who
549	whole
550	whose
551	why
552	will
553	wind
554	window (s)
555	winter
556	wish
557	with
558	woman
559	won't
560	wood
561	woods
562	work
563	would (n't)
564	write
565	yard
566	year
567	yes
568	yesterday
569	yet
570	you (your)

Discussion

Occasionally one finds a blind beginner with special abilities in the motor-manual and verbal techniques of braille reading, who naturally manifests a delight in the use of these techniques quite independently of his actual understanding of the printed page. Almost every child, however, must find meaning in the groups of dots which his fingers encounter in their journey across the page; these dots must stand for objects, ideas, experiences, with which the child has had at least some association.

Often a blind child enters upon his first year of reading full of enthusiasm over the fact that at last he is going to read "like the big boys do," only to have his interest vitiated by the fact that he must tie unfamiliar symbols to meaningless sounds for what seems to him like an endless period of time each day. His joy in learning through the braille page is gone and boredom has taken its place, all because he has not acquired the necessary meaningful pre-reading vocabulary.

The reasons why intelligent blind beginners have such limited useful vocabularies may vary from child to child but the most frequent are:

1. An actual lack of contact with even the simplest environmental experiences.

2. A deep-seated emotional and motor inertia resulting from a lack of opportunity to develop according to the normal maturational rate.

3. An equally deep-seated feeling of insecurity and timidity which makes of every new experience, no matter how uncomplicated, a fearsome and dreaded event.

4. A lack of comprehension on the part of the adults about him of the fact that the blind child must experience directly, through physical contacts, and through actual performance, objects and concepts about which the seeing child may learn through visual observation. For instance, a seeing child of four, or even of three, can acquire a usable idea of a clock by being told its name when he points at it, by watching the hands go around, and by seeing his parents glance at it in order to plan their activities. To the child without sight it is quite possible for a clock to mean nothing at all, because of the fact that not even the persistent ticking or whirring to which he may occasionally attend, has any definite location in space or relates in any way to the object on the wall or the desk; unless he has been shown the clock, and allowed to see with his own fingers how the hands go around, and listen to the tick or whir as it sounded at different distances from his ear. Nor will it be enough to give the child one opportunity to vaguely pat the clock. He must have sufficient experience with it as a functioning, meaningful object, so that it will make a lasting impression on his mind. Then, when he reads about a clock, the word will have enough accurate associations so that he need not hesitate over the meaning and can travel rapidly on to other words and phrases, fitting the word *clock* into the mosaic of additional concepts which go to make up the story.

In the Arthur Home Vocabulary List are to be found certain groups of words which may not need to be given much attention in a class of seeing beginners but which may prove to be stumbling-blocks to blind children. Through our experience at the Arthur Home we have learned that the blind preschool child who has been taught the meaning of directional terms has acquired knowledge which is valuable because it enables him to move about freely. For instance, although it seems impossible that a blind child of five or six should not know what is meant when his teacher tells him to "come here," nevertheless, we have known intelligent children who did not know these words simply because they had never been given a demonstration of their meaning. A brief play period every day devoted to games calling for responses to directional terms would soon give to the blind child of reasonably normal mentality not only an increased sense of freedom of movement but an increased understanding of his first reading experiences. Over a period of time, such words as *over, under, in, out, before, behind, up,* and *down* would have genuine value to the child.

Certain very simple action words also are likely to need demonstration, such as *run, jump, go, bring, carry, climb,* and *reach.*

Temperature terms also need actual demonstration, although naturally a demonstration of the word *burn* needs to be carried out with discretion. Then, too, a wide range of useful nouns can be learned by building on the eating and food-preparing activities. For instance, the words *fish, bowl,* and *orange,* can lead from the eating situation into other activity units involving the handling and care of different sorts of fish and other water animals; the use of bowls for the display of flowers, which in turn can lead to some other activity unit involving flowers; and the study of those fruits with which the child is likely to have the most experience.

Because of the fact that most children who enter our kindergartens and first grades in schools and classes for the blind have had no specialized nursery school training, much teaching of an essentially pre-school kind must be done by the primary teachers. To many of them it may seem a waste of time to devote a part of each school day to the study of such simple words as are given in our list. However, it is our impression that a year or two of experience with such a

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Guidance in the Education of the Blind

HARVEY G. REED

FROM ITS INCEPTION, the guidance movement has become progressively more inclusive. No longer are its programs limited to the vocational experiences of children in school. But the trend of this movement, which has appealed so strongly to those who train the seeing, is not observable in the history of the education of the blind.

An account of the development of social agencies reveals many facts about their origin and development. When programs of guidance were first organized, an attempt was made to help students choose the occupations for which they seemed intellectually, emotionally and physically best fitted. This was entirely a matter of vocational choice, and inasmuch as the occupations open to the blind were limited, effort of this kind in their behalf was considered unnecessary. As our social life continued to make new demands upon our schools, the movement became more comprehensive. At present, the educational and cultural phases of a child's life are considered along with the more specialized interest of some trade or profession. No longer is it possible to justify the objection that such a program embraces only something which promises little to those whose occupational opportunities are few.

A detailed examination of school experiences of the blind reveals the fact that they are called upon to make many choices which are not vocational, during their youth. Provision has been made in many progressive schools for the seeing for a guidance program directed by trained and experienced counselors to whom students may go for advice and information. It is apparent that there is great need for this service which some children are now receiving. Since this is true, how about the blind? Are they not more in need of this aid? Further investigation of the school activities of the blind will more clearly indicate the urgent need for guidance during the most formative years of their lives.

A child needs guidance as soon as he enters school and its importance continues and increases as progress is made through the different grades. At somewhat regular intervals a student is called upon to select courses and subjects in the school which are new to him. Such things as promotion, retardation, failure in subjects, and extracurricular activities often depend upon these choices. In schools which do not have a full-time vocational counselor, a child must depend upon some other person for help in making these important decisions. It so happens that often this assistance is obtained from a person who has only an indirect interest in his problem. A customary procedure is to assign the counseling to a classroom teacher. This is done in spite of the well known fact that teachers tend to become specialists in particular subjects and for this reason lack the breadth of knowledge needed by an adviser. Many schools give the work of an adviser to the principal. It is true that a principal can give advice and help of a general nature to a group. A school's greatest need for guidance, however, is for detailed and personalized study and advice. The problems of administration, organization, and general supervision make it impossible for the head of any school to give adequate attention to questions which call for precise analysis and individual treatment.

The idea that the home should contribute less to the educational life of the child is becoming more widely accepted. However, there is a growing tendency to place a greater responsibility for social development upon the home. In a residential school there is a reversal of this emphasis. When the school career of a blind child begins, intimate home relations are severed. For three-fourths of his time during late childhood and early adoles-

cence, the institution he attends is his home. The direction of social activities, normally a function of parents, becomes that of the school. This situation affords an excellent opportunity for controlling a child's entire social environment. The feeling is quite general among those who educate normal children that endeavors inside the school are counterbalanced by outside influences. This is not true, however, in a school made up of members far removed from contact with any outside force.

It follows that the circumstances incident to residence give a special opportunity to one who guides the cultural development of a blind child. Should a program which is so vital be left to a teacher whose responsibility lies in the classroom or to another worker whose interest lies elsewhere? If the guidance of such activities is left to persons other than those equipped by training and temperament for such work, we have a program directed by individuals who can only give it divided attention or by those not fitted for such an undertaking. If a classroom teacher undertakes this work, the result is not an adequate or well-rounded program, but one in keeping with her specialty, and this at the expense of her influence in the classroom—the place where her greatest service is performed.

Society is realizing, more and more, the social and individual importance of educating and training the handicapped for some useful work. Greater efforts are being made to find new industries and new methods for the blind worker. Institutions for blind children, however, tend to rely on agencies for the adult blind, rather than schools, to discover new trades for which their students may prepare. As a result, the kind and amount of work open to those without vision are quite limited. Only conventional occupations such as chair-caning, piano-tuning, and basketry are very general.

Any new process in industry must be found by scientific experimentation, or by trial and error. The business man finds it worthwhile to experiment with the material goods which he uses in production and is willing to establish and to maintain laboratories for this purpose. He is not disposed, however, to apply this same method of the laboratory in the selection and training of his personnel. Experimentation in the laboratory seldom results in the loss of more than some material thing. This same method applied to his employees often results in a waste of time in production, in the destruction of some valuable piece of machinery, or even in the loss of a human life. It seems necessary for schools for the blind to make a greater effort to find new occupations themselves by establishing shops on the order of general shops where students may try out different methods and be trained for the more suitable ones. A guidance program of a vocational nature can function to great advantage once such a plan is established.

Enrollments in institutions are usually small and do not justify the employment of both a full-time counselor and a full-time classroom supervisor. Economy demands a combination of the duties of a counselor with those of some other person. Inasmuch as it is not advisable to make either the teacher-counselor or the principal-counselor combination, it would seem logical to unite the functions of a classroom supervisor with those of a counselor.

No program, however attractive, will get far without a consideration of its cost. Advances in the social sciences, unlike those in the natural sciences, have always lagged. One following the evolution of our modern school system cannot help but be impressed with the slowness of its development. The results which have been obtained can not be determined immediately after a thing has been begun. For this reason progress seems slow. But this is as it should be. Social agencies can not stand speed. If the advance is too rapid there is a sudden stopping and often a reversal of movement. Society is not quick to advance funds needed for any social cause. The normal thing for it to do is to withhold finan-

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Education of Blind Pupils in Public High Schools

Alice G. Harvey

For nearly fifteen years certain schools for the blind have been sending some of their high school pupils to public high schools. What have been the results of this practice for all concerned? Have the hoped for benefits been realized? What of the staffs of the public schools themselves, and their reactions to it? I believe the answers to all these questions are, on the whole, very favorable.

One of the motives at the inception of the plan was a belief that the public high school diploma would be more valuable to the pupil than that of the school for the blind. In spite of well qualified teachers and high standards in the schools for the blind, the public were still apt to think of the blind pupil as one for whom special allowances of all kinds had been made, and must be made. If blind pupils were to attend regular classes in the third and fourth years in a public high school, and compete on equal terms with their seeing classmates, a powerful blow would be struck at this lingering prejudice. Also, while such prejudice still remained, the possession of the public high school diploma would be a great recommendation and advantage to the individual blind pupil seeking higher education or special training for a wage-earning position. This has undoubtedly proved to be the case.

Another obvious result has been the wider range of choice these pupils have had in the classes they have taken. A group as small as that composed of the junior and senior pupils in the average school for the blind cannot be given much freedom of choice in courses of study as long as they are taught at the school. The classes are bound to be almost uniform. When these pupils are sent to a public high school, this difficulty is considerably lessened. The preparation of lesson assignments for many subjects still requires part of a teacher's time, but there are some which can be done unassisted, and the total time needed for tutorial work is not so great as would have been required for the teaching of the classes taken. This, of course, is a statement which makes no allowance at all for the extra time required of the teacher of a subject for preparation and the marking of papers, neither of which is required of the tutor. However, for the high school pupil, it is a tutor and not a reader, who is required. The college student is expected to be mature enough to look after himself, and take charge of his own study, but the high school pupil who can do this, even among blind students, who are so much more earnest and responsible than the average high school student, is decidedly rare. Considerable guidance and explanation and discussion are required of the tutor, and the more general his or her education has been, the better for all concerned.

Among the subjects studied in public high schools by blind pupils have been the traditional English, Latin, French and history—American, English and European—as well as mathematics, sewing, and music. In languages and mathematics some of the prescribed textbooks are usually available in braille, and the good student can get along with little assistance from his tutor. In history and the other social sciences this is rarely the case. Pupils have also taken physics and biology, and, by having seeing pupils as working partners in laboratory periods, have been able to do very satisfactory work. Other subjects they have taken successfully are journalism, dramatics and such applied forms of English. Debating has been attempted, but the research involved is almost sure to be carried out by the tutor and not by the student; consequently, competition with seeing pupils in debate is not more val-

uable than competition with other blind pupils. The time spent in preparation of home work is always, of course, longer than that spent by the seeing pupils. If textbooks are in braille, assignments have been made on the basis of average reading speed of seeing pupils, and are long for the braille reader. If assignments must be read by the tutor, as is so much more often the case, reading aloud also takes more time than the seeing pupil would spend, and notes must be taken as well, because the pupil cannot go back to the text for himself. A further difficulty arises here. Should the pupil formulate his own summary, or should the tutor dictate one? Ideally, the pupil writes his own. In practice, all too often, this is not so. Here again, the time factor causes the difficulty. Since lessons are taking a great deal of time anyway, it is difficult to give the extra time required to help the pupil formulate his own notes, and the quicker way, direct dictation, is likely to be taken.

So far, the main consideration has been the actual studies of the blind pupil, and his attainments in them. With the increasingly social emphasis in education, other questions become almost more important. What, then, has been the effect on the blind pupil as a person? In every case I have known, the experience has been tremendously stimulating. At first the hustle and bustle of a big city school has sometimes been confusing, but the pupil soon became accustomed to that. The contacts with large numbers of seeing pupils and the many new ideas and experiences encountered are of incalculable value. The life in the school for the blind is essentially a sheltered one. The majority of the pupil's associates have the same handicap as he, and he is not faced with the problem of adjustments to a world of seeing people. However, the time when such adjustments must be made is drawing very near for the oldest pupils in the institution. If, therefore, they can begin to make such adjustments while still partly sheltered by the institution, the transition will be more gradual, and easier to make. The tendency of blind people to stick together and avoid the company of seeing people has been much deplored, but it is not to be wondered at when their contacts during school days have been entirely among themselves. Attendance at a public high school during the last years of the course makes possible contacts and often friendships of immense value for later life.

The public high school itself is frequently crowded to capacity and so busy that any added burden is unwelcome. In spite of this, the principals and teachers have almost always been most gracious about accepting blind pupils. Often they have been dubious at first about the results; sometimes teachers have felt they must make great allowances for these pupils, and have not expected as much of them as they should; in the long run, however, they have all, principals and teachers, approved the experiment. Many have said very appreciative things about the stimulus to the seeing pupils provided by the presence of the blind ones, who have proved so faithful and enthusiastic in their work.

Motives of expediency have sometimes led to the sending of blind pupils to public high schools in order to reduce teaching load, but the results have been so valuable that the practice deserves to become widespread even in schools where a larger enrollment results in a greater variety of classes within the institution. The wider experience of life among seeing associates, and the contacts and friendships formed with the new classmates are so valuable to the blind pupils that they are worth a great deal more extra effort than is involved in this undertaking.

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cial support until convinced that an outcome may result which is commensurate with the effort expended. Only then will it provide funds and go ahead. That has been the history of the development of our social agencies. Funds for establishing or expanding a program for the education of any group can be obtained only in this manner.

A Group Intelligence Test in Braille

ETHEL N. FORTNER

AN ADAPTATION OF the Kuhlmann-Anderson Intelligence Tests for grades six through twelve is now available for use in schools for the blind.

The intelligence test, as a device, was developed to satisfy a specific social need, and such tests are now widely used throughout the civilized world. Although the need is even greater in the case of the handicapped, it seems that educators of the blind have lagged in the testing field. It is difficult to establish norms for tests for the blind on account of the relative scarcity of homogeneous groups, the limited facilities for research in most state schools, and the time consumed by the many-sided education needed by the blind—leaving little time in the child's school day for experimentation. Schools for the blind need to separate the mentally normal from the inferior for educational purposes, for social and emotional adjustments, and because of economic considerations.

Individual measurement of the blind was proved possible in the early days of the testing movement by Irwin and Haines[1] and various revisions of the Binet tests have been used successfully for a generation. Individual tests have the advantage of greater accuracy and give opportunity for other diagnosis besides that of a person's intelligence; but they are so time-consuming that the need for a group test has been felt. The Sargent adaptation of the Otis Classification Test[2] partially fills this need. This test is given orally and is greatly abbreviated. There is no satisfactory written group test available.

The writer studied the excellent group intelligence tests in use in public schools and chose the Kuhlmann-Anderson Tests for a research study, in hopes that this need might be met. After three years of experimentation and group testing in sixth, seventh, eighth, and high school grades in three schools for the blind, this adaptation is offered with the belief that it will be of service in the field.

A test of intelligence should be composed of relatively new material which increases in difficulty at the successive age levels. It should be reliable and valid, have well-established norms, and agree with other judgments of intelligence. It must not be too long; it must be easy to give and score; it must be inexpensive. Besides satisfying these criteria, a written group test for the blind must be primarily a language test and adaptable to the mechanics of braille. The parts must be short enough so that when the time is extended for pupils using braille a single sitting will not become tiresome. It needs *especially* to be well standardized, to include concise and definite directions, and to be easy to give and score.

The Kuhlmann-Anderson Tests were chosen because they met these requirements. They are standing up well in public school use. With a few exceptions, they admitted of transcription into braille with almost no change in text and only such changes in directions as related to names of materials used and time allowed. The median mental age method of scoring proved to be a decided advantage for it allowed additions and omissions within the groups of tests without restandardization, and eliminated the undue significance of zero and maximum scores. The use of practice examples helps in clarifying the directions.

The teacher who attempts to use these tests should become familiar with the Instruction Manual for the ink-print edition of the Kuhlmann-Anderson Tests, published by the Educational Test Bureau, Inc. For those unfamiliar with this group of tests, we would explain that it consists of thirty-nine tests, arranged in order of difficulty, giving a most consistent increase in score for successive age

levels. Each test contains a number of trials or items chosen carefully for their discriminative quality. The tests are arranged on a sliding scale so that a largely different battery is used at each year level. For group testing, the ten tests that best fit the age and grade level are used. The original norms were based upon a large number of children, a minimum of 350 at each age level.

In adapting a group test for use with the blind, one is confronted with difficulties whether he chooses the oral or written method. The oral group test dictated to students using typewriters or writing in braille is difficult to time and standardize. It makes little allowance for individual differences, in that the subject has no chance to give one item more time and thought than another and no chance to go back over his work to improve it if he finishes in less than the time allowed.

If the written method is chosen, the subject must read from braille and write his answers in the same way. This brings up the problem of the standardization of braille reading time. Fortunately, much research has been done on this problem by the research departments of our larger schools. In his early work, Hayes[3],[4] found that blind pupils attain a reading rate of only about one-third that of seeing pupils and has persistently recommended a three for one differential in group tests of blind pupils. Maxfield[5], also, found that good braille readers read at one-third the rate of comparable seeing readers, and adapted the educational tests[6] now in wide use in schools for the blind, using the three to one timing.

Educators in our field are beginning to face the fact that there are degrees of blindness and that all children with eye difficulties are not necessarily braille readers. The use of braille and the written method will exclude sight-saving children who do not need to learn braille. These can use the original or ink-print blanks of the Kuhlmann-Anderson Tests, since their print is large, clear, and well spaced. The written method under discussion also excludes poor braille readers, who are numerous in any school for the blind on account of wide differences in age at school entrance, age at time of loss of vision and adjustment, manual sensitivity, and amounts of vision, that often interfere with finger reading. These may be tested individually with the Hayes-Binet scale. In selecting pupils for the group test, one should use only those in the sixth grade or above who read braille at least at the sixth grade level as checked by the braille standardization of the Gray Oral Reading Check Tests[6]. Even with care in this selection, the variation in speed of reading will affect the pupils' scores.

In the writer's adaptation of the Kuhlmann-Anderson Tests for use with the blind, the directions were first changed to relate to the materials and methods used in writing braille. Then, each using a slate and stylus, the children were instructed to write the answers on braille paper instead of underlining the answers in the booklet. The writing of each test on a separate sheet and of each item on a new line prevents unnecessary confusion among the pupils and facilitates scoring the papers. A sample from Test 32 follows:

EXAMPLES				
quarter	nickel	dollar	(dime)	penny
rod	yard	inch	mile	foot
TEST ITEMS				
1. gallon	gill	bushel	quart	pint
2. township	county	acre	section	state
3. one	multitude	few	none	many
4. clause	syllable	sentence	letter	word

DIRECTIONS FOR GIVING TEST 32

EXAMPLES: "Look at the examples at the top of this page. The first is 'quarter, nickel, dollar, dime, penny.' If these were arranged in order from the smallest to the largest in value, the order would be: 'penny, nickel, dime, quarter, dollar.' Which is the middle one in the list?" (Pause) "Dime. You see the word 'dime' has parentheses around it to show that it would be the middle one in the list if they were arranged in order."

"Look at the second example: 'rod, yard, inch, mile, foot.' If these were arranged in order, the order would be: 'inch, foot, yard,

rod, mile.' The middle one in the list is .....?" (Pause) "Yard. Write 'yard' on your paper after your name. Write number 1, on the second line. Find number 1 in your book."
Trials: 10 minutes.

"Now take one list after the other and write the word that would be the middle one in each list if the words were arranged in order. Number as you go. Ready. Go."

At the end of the test, say, "Stop. Hold up your papers. Put a new sheet in your slates. Write your name at the top. Turn to the next page."

The time allowance for seeing pupils using the printed tests varies from one-and-a-half to three minutes. For braille, the time varies from five to ten minutes. The first time the adapted test was given, the children were allowed exactly triple time on each test. With each succeeding experimental trial, the time on some tests was varied to allow for such things as finding the place, numbering, turning pages, and extra braille writing time until a point was reached where some subjects finished each test.

On account of loss of time in writing full replies in braille, changes were made in some tests so that the initial letters of words selected could be used as the answers. Specific changes made in the tests are as follows:

1. Test 24, omitted because it depended on drawing from geometrical forms. Scale changed for grade VI from "Tests 22 to 31" to "Tests 21 to 31, omitting 24."
2. Test 25, alphabet put on two lines to avoid crowding.
3. Test 26, changed "printing" to "covers."
4. Test 27, used braille symbols to represent figures. Sectioned numbers to help in finding place.
5. Test 34, changed order and arrangement of parts to make reference clearer.
6. Test 39, broke continuous part into numbered sections so parts would be easier to locate with the fingers.
7. Tests 21, 23, 26, 28, 34, 37, have slight changes in words to make use of initial letters possible.
8. Tests 23, 26, 34, 35, 37, 39, required more than one page when transcribed into braille.

Three years of testing, study, and revision of the Kuhlmann-Anderson Tests and directions have led to the above changes. A total of one hundred fifty-one blind children who read braille with facility have been tested, and their scores compared with their Hayes-Binet scores. In 1938, since the test has been in its present form, one hundred two blind children in grades six to twelve inclusive who were proficient in braille have been tested. These tests were distributed as follows:

Oregon State School for the Blind,	16 cases
Washington State School for the Blind	36 cases
Iowa State School for the Blind.... (tested by Georgie Lee Abel)	50 cases

Each of these 102 cases were also tested with an individual Hayes-Binet, with the following results:

	K.-A.	H.-B.
Range	63	83
Mean	101.8	98.1
Sigma	15.68	14.82
r.= +.567		
p. e.= .068		

This adaptation of the Kuhlmann-Anderson Tests should be of value in surveys where a preliminary group intelligence test for upper-grade pupils is desirable, and in the testing program in any school where time and service are not available to carry on extensive individual testing. The four high school grades can be tested together, the seventh and eighth grades at one time, and the sixth grade separately. The Hayes-Binet test requires at least an hour for each pupil. The group test can be given to twenty pupils at one time. Thus, at one sitting, the work of many hours can be accomplished.

When using this test for survey purposes, one should retest with the Hayes-Binet all cases with an I.Q. above 120 or below 80. In the comparison of Kuhlmann-Anderson and Hayes-Binet scores, the writer found that the wider variations between the two I.Q's. of a pupil occurred in the high and low scores.

The Kuhlmann-Anderson braille test booklets will be printed by the American Printing House for the Blind, Louisville, Ken-

tucky; and will be chargeable against quota accounts. The test manual which gives all the directions for giving the adapted tests, and includes score cards and record sheets, may be obtained by addressing: Mrs. Ethel Nestell Fortner, Supervising Teacher, Oregon State School for the Blind, Salem, Oregon.

The ink-print instruction manual[7], from which the test is adapted, may be obtained from the publishers, Educational Test Bureau, Inc.

The author will be glad to answer any questions about the test and to receive constructive criticism. While the tests are not in their final form, it is only through use that they can be refined further. They are presented now in the hope that, eventually, they will prove to be a worthy contribution to the cause of the education of the blind for fullest living.

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(*Continued from page* 48)

procedure would convince the teacher of its time-saving as well as nerve-saving value.

The Arthur Home Vocabulary List is short and most of the words can be taught in groups through the media of simple activity units. It is our hope that teachers will find it of value in preparing their children for reading their first braille texts. Also, it seems likely that a knowledge of the words in this List will help the children in their acquisition of a social maturity more nearly commensurate with that of seeing children.

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Busybodies

Samuel P. Hayes, Ph.D.

Why can't people mind their own business? In a recent newspaper we read that during a dramatic scene in the rehearsal for an opera, a dagger slipped from the hand of one of the stars and in falling scratched the hand of one of his companions. The injury seemed slight at the time and was soon attended to, but a complication set in and the next day the injured man died. This, of course, was a tremendous shock to all the persons involved, and particularly so to the opera star who had held the dagger, although there is really no indication that he could be blamed for the tragic result. But someone took it upon himself to notify the opera star of the fatal outcome just before he was going on to give his next performance. What a terrible situation for anyone to be suddenly informed that he has killed a comrade! How frightfully difficult for a high-strung person like an opera star! It is most remarkable that he was able to "carry on" at all, and gives us a fine example of the theatrical tradition that an audience must not be disappointed, no matter what it costs the individual actors.

But why did anyone take it upon himself to break the news just before a performance? Was it pure thoughtlessness or can we find some other explanation? Certainly no one could honestly believe that it is his *duty* to bear such news at such a time, and as a matter of fact it is often our duty actually to suppress the truth for the benefit of others. For instance, there are situations when it is positively dangerous for a patient to know about his bodily condition. This is especially true in regard to heart disorders, for the simple reason that certain disorders of the heart may prove suddenly fatal if the patient has any sort of mental shock. This often makes it wise to minimize the actual state of affairs lest anxiety and worry aggravate the patient's condition. Nurses and doctors well know that there are many situations in which the whole truth must not be told. It is a pity their training can not be more generally shared.

"Spilling the beans" is often a major offense in *business* and in *social* life. Releasing the news on changes of business policy before carefully planned dates, talking too freely about secret manufacturing processes which oftentimes have a very high money value, and rumors of success or failure, which may or may not have a foundation in fact, may cause great losses to the interested parties. Even teachers after faculty meetings cannot always restrain themselves from talking of school policies which are not for the *general* ear; and of course everyone is suspecting engagements, and when marriageable young men and women are seen together, often extreme embarrassment is caused to the parties concerned. "All the world loves a lover," but we may sometimes injure them by over-attention!

Why do we have busybodies? Are there many of them? Do people really "listen in" on party lines? Does every village have its "watch-tower?"

Common sense explains the activities of busybodies as "pure cussedness," and quotes the well-known proverb about the devil finding mischief for idle hands to do. The fact is that many *very busy* people are also terrible gossips; moreover, modern psychology does not subscribe to the doctrine of innate depravity but seeks some other root for cussedness. Apparently the busybody gets at least two kinds of ego-satisfaction, neither of which is particularly creditable. (1) We find that same *desire to be first* which impels the motorist to get ahead of everyone else on the road; similarly the busybody seeks to be first with the news and to spread it

(*Continued on next page*)

First Exchange of Teachers of the Blind

Miss Marjorie DuMez who teaches English, French, Latin and public speaking at the Michigan School for the Blind at Lansing, has become a member of the teaching staff of the Royal Institute for the Blind at Birmingham, England for the present school year through the first exchange of this kind ever arranged by the English-Speaking Union of the United States in residential schools of special education.

Under the terms of this exchange, Miss Stella M. Mawer, of the Royal Institute, is filling Miss DuMez's position at the Michigan School.

Miss DuMez was educated at the Holland High School and at Hope College, Michigan. She did social case work at Michigan State College and went to summer school at Besancon, France.

Miss Mawer was educated at the Birkenhead Girls' Council Secondary School and the University of Liverpool.

Miss DuMez says that she looked forward to the exchange as a means of getting fresh ideas for her work and an idea of the social system in the residential schools of England. She is interested in learning of anything in their curriculum that might be added to that of the Michigan School. Among other things, she would like to know the British governmental attitudes on world affairs and toward the United States.

Josef G. Cauffman, Superintendent of the Michigan School for the Blind, in commenting on Miss DuMez's appointment, said:

"The administration of this school hopes, through the exchange of teachers with the Birmingham institution, to establish a closer working union with British agencies for the blind. We believe Miss DuMez, through this exchange, may learn methods of teaching and placement at first hand.

"We were anxious for the beginning of this experiment, which, though not new to the regular public school system, is, as far as we have been able to learn, the first of its type in the residential schools of special education."

This special exchange was one of eighteen which were arranged this year between schools in the United States and in England. These exchanges, most of them in secondary schools, were between schools in California, Connecticut, Illinois, Massachusetts, Michigan, New Jersey, New York, Ohio, Pennsylvania, South Dakota, Virginia, Washington and Wisconsin.

Subjects covered are English, art, mathematics, history, French, physical training, Latin, physics and the classics.

These exchanges are arranged by the English-Speaking Union to help carry forward the work which the Union is doing in "drawing together in the bond of comradeship the English-speaking people of the world."

(*Continued from preceding page*)

before it "gets cold." (2) In many cases we suspect a more sinister motive. In the severe competition of life one can sometimes raise himself by pulling down his competitors or rivals. Undoubtedly, considerable muck-raking has no other motive back of it, and the busybody is doing the same thing in a small way.

May I suggest a resolution which is just as suitable in any month as it would be on January first? Why not lay it down as a general proposition, "I will mind my own business?" If items are brought to me without my asking, politeness may demand that I listen but I can perfectly well resolve to do no *broadcasting*. And I should be particularly reticent if some items are of such a sort that passing them on might do harm to someone else.

Dr. Allen Says:

SOME EXPERIENCES AND A PROPHECY WHICH SEEM TO PROVE WISE AND RIGHT THE PERKINS TRADITION OF NO COEDUCATION OF BLIND BOYS AND BLIND GIRLS.

My London and Boston schools each had several sets of blind pupils who were brothers and sisters and my Philadelphia school two sets also who were teachers. But when, on going through the Philadelphia accession records, some eight or ten "blind families" were found, I sought for explanations. Consanguineous parentage seemed to account for some, defective eyesight marriages for most. A visiting mother amazed me by saying that of her several children, only every other one was blind. A couple of parents who had themselves first met as fellow pupils had but *one* child and he, too, nearly blind. Him they later heroically forbade their house and home because he insisted on marrying a fellow student of ours.

Interesting and revealing as these discoveries were, they came to a full stop during our long and careful planning for the new plant at Overbrook. Removal to it naturally invited, instead of a study in inheritances, that of the creative influence of environment. In behalf of future prevention, however, we did find time once a year to take to town a group of little victims of babies' sore eyes whom a Philadelphia oculist, L. Webster Fox, deemed it important to show to his students as the tragic result of some physicians' culpable neglect. Afterwards, in Boston, active membership in both the Massachusetts Association and the Commission for the Blind could not but deepen my interest in the growing movement for preventing needless blindnesses. But again, developments at the new Perkins were so absorbing that I never returned to such researches in inheritance as our records could supply.

That study another undertook in the late 1920's—Dr. Lucien Howe, of Buffalo, "the father of ophthalmia neonatorum legislation," he who endowed at Harvard the Howe Laboratory of Ophthalmology. As a result of his visit to Watertown and at his request our Miss Jessica Langworthy combed the Perkins material, reporting all pertinent data to him. From these there has been drafted, since his death, a series of pedigree charts of families having had two or more pupils at the Institution. These charts have been displayed in New York City and now, in the autumn of 1938, are shown in the Perkins Museum. Here follow some of the readings accompanying them—

Including All the Recorded Varieties
There Are More Than 120 Ophthalmic
Anomalies Exhibiting A Definite
Hereditary Transmission

Causes of Blindness in the Present Enrollment—(1930)

196 probably hereditary; 94 probably not hereditary

Eugenic Work for the Future

About 33% of the Perkins enrollment suffer from Optic Nerve Atrophy and Congenital Cataract which usually behave in heredity as Mendelian Dominants. Blindness from these two preponderant causes could be nearly eliminated in a single generation, if individuals suffering from them could be restrained from reproduction.

When Liborio Delfino, Overbrook's thirty-year field officer, heard that the "blind pension" was likely to become law in Pennsylvania, he remarked prophetically: "That will mean a lot of hasty blind intermarriages; yes, and will hasten the coming legislation limiting wedlock to the physically fit." Yet even today some individualists who should know better voice the unenlightened public's feeling that "the blind have so much in common that they should be encouraged to intermarry *and be happy.*"

I have no patience with such ignorant sentimentality. Our National Society for the Pre-

vention of Blindness has considered the following statement of mine in 1935 as "highly significant": "Could I choose my life work again, it would be within the same field of endeavor. But it should include every influence I could bring to bear towards making our schools for the blind unnecessary through lack of pupils."

The Teachers Forum

for

Instructors of Blind Children

Address all communications to

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The Editor will not be responsible for opinions expressed in signed articles

JANUARY, 1939

The beautiful sentiments expressed in Dr. Athearn's New Year's greeting seem very appropriate for the first page of this January number. We are sorry that not all of Dr. Maxfield's article could be printed in one issue of the *Forum*. Please note that the footnote references in the first installment are numbered so as to correspond with the bibliography appearing in this issue. Four matters of particular interest are discussed this month: "Guidance," "The Education of Blind Children in Public High Schools," "Group Intelligence Testing" and "The Exchange of Teachers." Additional discussion of the first two subjects appears on pages 100-110 and pages 150-152 of the Proceedings of the Thirty-fourth Biennial Convention of the A. A. I. B. The interest in intelligence and achievement tests at the present time is very encouraging and the work of Dr. Hayes, Miss Abel, Mrs. Fortner and others is highly commendable. The idea of exchanging teachers with some other school for the blind either at home or abroad is a splendid one and should be followed by other superintendents. The exchange teachers would bring many good ideas and helpful information to the schools which they were visiting and would take the same back to their own schools when they returned. It seems best for such teachers to remain on salaries paid by their home schools in order not to lose the connection between the employing schools and the teachers. Furthermore, this plan does not disturb the status of teachers where there are state tenure or retirement systems. Dr. Allen's articles are always stimulating and provocative of thought and sometimes argument.

All educators in our field will be interested in the article in regard to Mr. Siegfried Altmann, which appears on pages 184-5 of the December *Outlook for the Blind*.

A ten-year Index of the *Teachers Forum* has been prepared and may be obtained by subscribers without charge upon application to the Foundation.

Our Contributors

Dr. Clarence R. Athearn is Director of Educational Research at the New York Institute for the Education of the Blind.

Dr. Kathryn E. Maxfield is well known to most *Forum* readers, having been connected with the Foundation, Perkins Institution and the Arthur Sunshine Home and Nursery School for the Blind.

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Miss Alice G. Harvey (who is now Mrs. Robert E. Hershey) taught in the Idaho State School for the Blind during the past three years and prior to that time at the Maryland School for the Blind.

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Another Beam of Light Through the Darkness

O. J. Hill

The fact that pupils had vague and erroneous ideas of size, shape and texture of many objects not accessible to the touch had been challenging the Superintendent and members of the faculty of the Ohio State School for the Blind; but the incident that seemed to make a remedy paramount, came from absurd answers given in intelligence tests and class discussions. It was discovered that many pupils, even of adult age, had very little idea of comparison and proportion. Some believed a rat was as large as a rabbit; that a cow was nearly six feet high; that a sheep was just a little smaller; or that a robin was as large as an owl. Many pupils of the school evidenced a keen desire to know just how the exterior of their school looked. As one pupil said, "All we know about our school is as high as we can reach with our finger tips." Some pupils wished to know what a modern house looked like compared with a colonial or Cape Cod home. A pupil taking a course in the greenhouse, knew what kind of flowers were best adapted for a formal garden, but had very little conception in regard to shape and arrangement of such a garden.

The W.P.A. Shows a Way

There was no question in the minds of those who were making the study that here was a field of great potential educational value; wherein very little had been done. After giving the matter a great deal of consideration, it was decided that models of things seldom, if ever, "seen" by the blind would be the solution to the problem. Then the big question arose, "How can we financially sponsor such a gigantic project?" After many conferences with various officials, both National and State, the idea was accepted by the Administration of the W.P.A. Nearly $45,000 was set aside for the project.

What Shall We Model?

After this very generous response and interest shown by the National Government in our idea, we were then able to attack other problems. There were many of them. For instance, of what things shall we make models? One procedure in answering this perplexing question was to have each teacher submit a list of things he felt would be helpful in his class work. The second procedure was for the one in charge of the project to take an unabridged dictionary and all printed school texts that were especially rich in pictures; go through them carefully and set down everything that he felt would be of educational value to a blind pupil. Needless to say, an extremely long list resulted.

The Material to Be Used

Now came the question of material. What kind would be used for the various models? It was obvious that the same material used to construct a model locomotive or skyscraper would not do for birds and animals with their delicate feathers and soft fur. The idea of getting a taxidermist to mount the birds and small animals was abandoned, chiefly, because the securing of specimens would be almost prohibitive, and because mounted birds, handled as they would necessarily have to be, would soon have the appearance of going through a first class molt. It was decided to draw an outline of the birds and animals on wood and to build them up with modeling clay, plasticine or plaster of Paris. What kind of wood to use was the next question that arose. Masonite board or press board seemed to offer all of the desired features and few objections. It was very durable, had no grain and would permit very close cutting with the saw. The birds were then cut out and built up in high relief with plasticine, details being worked in with modeling tools.

We discovered that this material would take oil better than water coloring and after dressing down the edges with sandpaper, a coat of clear shellac was applied and the model was completed.

Map Making

The construction of a relief map showing five different ways that gully erosion could be checked, required something still different. It was decided to make the model on a board 15 x 20 inches, with gullies and ravines built up so that a blind pupil could easily detect the various methods of erosion control. The final procedure was to soak up newspapers in water, then mold them in shape as a skeleton for the ravines. This was covered with a plastic material, allowed to harden and later painted. Dyed sponges were used to show shrubbery and trees. The results were excellent from the standpoint of educational value and artistic achievement.

The Use of a Scale

To make the models of large objects it was necessary to scale them down. Arbitrarily, no model, regardless of the size of the original, was allowed to exceed thirty-six inches in height or length. A brass tag embossed in braille was attached to the model giving the name, dimensions and scale for extension. Thus, if the model is twenty-five inches long and the scale reads one inch equals four feet, then the original would be one hundred feet long. Now the pupil can use his axes which measure vertically and horizontally and get the actual dimensions of the original.

Developing a Sense of Proportion

Please understand that we realize an animal or a bird built up with modeling clay, does not have the same "feel" as the original animal. Neither does it have temperature, movement or the silky texture of feathers and fur. But our models do make it possible for the child to draw a comparison in size and correct his sense of proportion which in some instances was so ridiculous as to be almost pathetic.

Each Model a New Problem

When we came to the task of constructing models of different buildings, the question of material arose again. The carving of windows and ornamentations out of wood were abandoned because of cost of machinery and time involved. Plasticine was used for designs and ornaments of the United States Capitol; but for the skyscraper model, it was found far more effective to glue strips of masonite to the flat sides for windows.

To give the lighthouse the "feel" of concrete, a flat white paint was spread on the metal cylinder with white sand carefully worked into the paint. Lincoln's birthplace was modeled as nearly as possible like the original log house, even to the same number of logs as in the original. The Taj Mahal, the Salisbury Cathedral and a pre-Revolutionary home, such as Mount Pleasant, all required different planning and different material.

The making of relief maps presented still another problem. How could we, for instance, make a relief map of Ohio, showing elevations and county divisions, so that each of the eighty-eight counties could be taken out and replaced? How could we saw through the masonite board and gesso and have a perfect fit of parts when placed back in the frame?

How the Educational Models Are Used in the Learning Process

It became quite obvious after the models of the famous buildings of the world had been completed, that it would be necessary for the teacher to become thoroughly familiar with the historical background as well as the details of the original building, before she could adequately present it to the pupils.

Anticipating this need, the research department delved through many volumes dealing with the social, political and historical importance of each structure, as well as the interesting features of its construction. All this material was compiled and put into a pamphlet to be distributed to the teachers and pupils. Accompanying this description were suggestions explaining how the teachers might proceed in presenting the models

to their classes. One way suggested was to build up an approach to the model by reading all available material pertaining to the original. Thus, when the model is presented, the pupils have a working knowledge about it at the start.

Another method followed by some of our teachers was to present the model at the start, allowing the pupils to explore and ask questions as they continued to investigate. In the lower grades many lessons in English, history, geography and spelling were developed from the replica of Abraham Lincoln's birthplace.

At other times the teacher of literature finds it very helpful to bring into her class a model of an Elizabethan theater, a colonial home, or a model of Stratford-on-Avon.

The Latin teacher speaks highly of the replica of a Roman home as a teaching device: "The House of the Tragic Poet was excavated near the end of 1824 and the number and beauty of its paintings aroused universal admiration. Unfortunately, some have been removed and others have perished. The subjects of the paintings were all taken from the *Iliad*. I use them to introduce various incidents of the *Iliad* with which the boys and girls would otherwise have no contact.

"A wealth of ancient stories and mythology is opened up by other paintings. The class was especially curious about the two men (Daedalus and Icarus) who are depicted with wings and whose story represents a belief in aviation even among the ancient Romans.

"Other than art, religion and mythology, there is much to represent the daily life of the Romans. The richness and elegance of their mural decorations is offset by the scarcity and discomfort of the furniture. Two types of lamps are shown in this home, one suspended from the ceiling and the other tall lamps resting on tripods.

"It is a shame that all Latin classes cannot have such a project as this to foster interest in a people whose language they are studying. The boys and girls understand more clearly through the study of this model that the Romans were a people who actually did exist and were not legendary; that they had attained a high degree of culture and refinement, as well as military power."[1]

As one of our English teachers expresses it: "The aim of composition work whether oral or written is to help boys and girls to discover things they want to say and then enable them to say these things as well as possible. This is sometimes quite difficult for those who do not see. In having these replicas, and the necessary information regarding them, we have created a situation which aids this expression. Certainly it is a wonderful opportunity for our boys and girls to answer more accurately the many when's, where's, who's, what's and why's; and gives them a keener sense of responsibility by having familiarity with reference material, by making their own notes and by preserving memoranda."[2]

The teachers of the primary grades make effective use of the models of birds and animals. One of them reports as follows:

"Visual and other sensory aids to instruction are very valuable. The school models are not a fad but an efficient and workable means of bringing the blind child into actual contact with those things about which they attempt to learn. They play an important part in the education of the youngest as well as of the oldest child. They strengthen his spirit of inquiry and create social relationships which reach beyond the doors of the classroom and provide greater opportunity to live and learn naturally.

"The following units, based on aroused and fostered interest in birds on our school campus, will be developed throughout the year.

1. Problems and Questions which lead to Investigation
   - A. General Questions
     1. What are the birds that are most abundant in the vicinity of the school?
     2. What birds stay the entire year?
     3. Classify the common birds as to migration

B. Specific Questions about the Bluejay
   1. How distinguished?
   2. Flight—rapid or leisurely?
   3. Color—advantage or disadvantage?
   4. Where found?
   5. When does it molt?
   6. Where does it lay its eggs? When?
   7. Describe eggs—shape, size and color, number
   8. Food

2. Finding Answers to Problems and Questions
   A. Through use of Arithmetic
      1. Number of eggs
      2. Number of young birds
      3. Size—length, wing, tail, bill and body, legs
   B. Through Language and Reading
      1. Oral reports given from individual observation
      2. Class discussions held concerning facts discovered by inspection and in reading—labels and library books
   C. Through Music
      1. Victrola records of bird calls
      2. Songs

3. Meanings, Attitudes and Appreciation probably Developed
   A. An attitude of curiosity about birds and their relation to plants, insects and people
   B. A recognition of the economic value
      1. Insect eaters
      2. Weed seed eaters
      3. Flesh eaters
      4. Scavengers
   C. An appreciation of the beauty and interesting characteristics they display
   D. Understanding of respect for the rights of all living things
   E. An eagerness to share experiences and observations

"New interest foreshadowing further units of work in other phases of nature, as trees, wild flowers, and insects will lead to use of other models, which also can be developed along similar plans. Through numerous activities the children are making more vital and real contacts through more models. Their interests and concepts have become wider and they use their leisure time more advantageously."[3]

A teacher of the fourth grade makes the following contribution: "Every boy and girl has the desire to know how things look and many of those things are now made more realistic through the use of models at Ohio State School for the Blind. In the fourth grade many of these models are used effectively, for example:

The Lighthouse

Arithmetic—(The scale—1 inch equals 3 feet) It involves measurement and arithmetical fundamentals in a real problem to get the actual size of various parts.

Geography—A better understanding of the life of people who care for the lighthouse will be gained; also how the lighthouse aids navigation.

Spelling—Different words associated with lighthouse and its keepers can be used as a basis for spelling lesson.

Reading—A knowledge of stories centering around lighthouses are requested and the class or even individual interests are built up to do more outside reading.

English—It stimulates creative stories with the lighthouse as a central idea."[4]

In order to provide creative work for the blind pupils of the lower grades, an activity program has been arranged to follow the presentation of the models. This plan consists in having the pupils construct with building blocks and the sand table similar models, transferring their conception of the original model to the one they are building. This procedure has been found to be most efficient as a "follow-up" device.

The following quotation was taken from the *Columbus Citizen* newspaper: Miss Hazel Hurst, twenty-five year old lecturer, blind since birth, whose seeing-eye dog was refused admittance to England recently, received one of the greatest thrills of her life in Columbus yesterday. Miss Hurst was taken by officials of the School for the Blind into a room where models of large objects have been constructed for the education of blind children.

"There were models of log cabins, houses of all kinds, buildings, skyscrapers, churches," Miss Hurst said. "It is a pioneering work they are doing here. I have never heard of anything like it before.

(*Continued on page 72*)

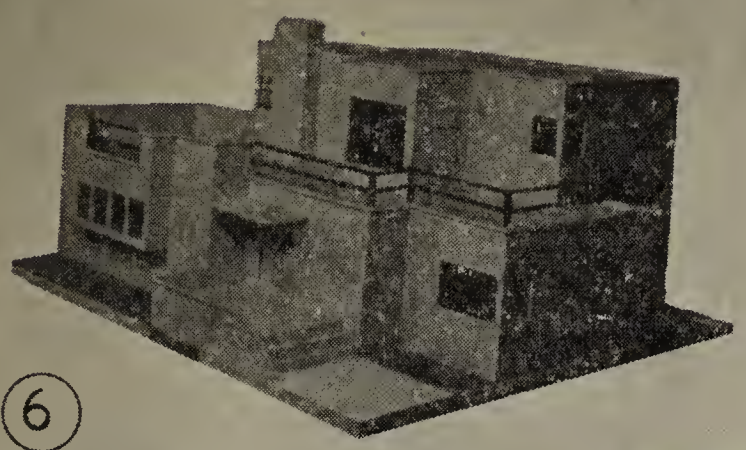
1. INTERIOR OF A ROMAN HOUSE—This model has faithfully carried out every detail of "The House of the Tragic Poet." Some of the paintings shown in the model are: "Fall of Icarus," "Sacrifice of Iphigenia," "Theseus and Ariadne" and "The Parting of Achilles and Briseis." Length of model—27", width—27⅞", height—17⅜".

2. ARTESIAN WELL—The following strata of rock and soil are shown in this model: top soil, subsoil, limestone, shale, sandstone and granite.

3. TAJ MAHAL—The costliest private tomb in the world, built by the Indian ruler Shah Jahan as the final resting place for the remains of his favorite wife Mumtaz-I-Mahal, "The pride of the place." Length of model—39", width—39", height—21½".

4. MOUNT PLEASANT COLONIAL HOME—The finest example of domestic colonial architecture in the region is unquestionably "Mount Pleasant," otherwise known as the MacPherson or the Arnold House. A dwelling exceptionally rich in historical significance. Length of model—25", width—34½", height—25¼".

5. BLOCK HOUSE—A military fortification, formerly erected on frontiers and in pioneer settlements, usually to serve as a place of last resort in case of attack by hostile forces. The roof of this model can be removed, showing the inner structure. Note the loopholes for musketry at the sides of the model. Length of model—19½", width—20", height—14".



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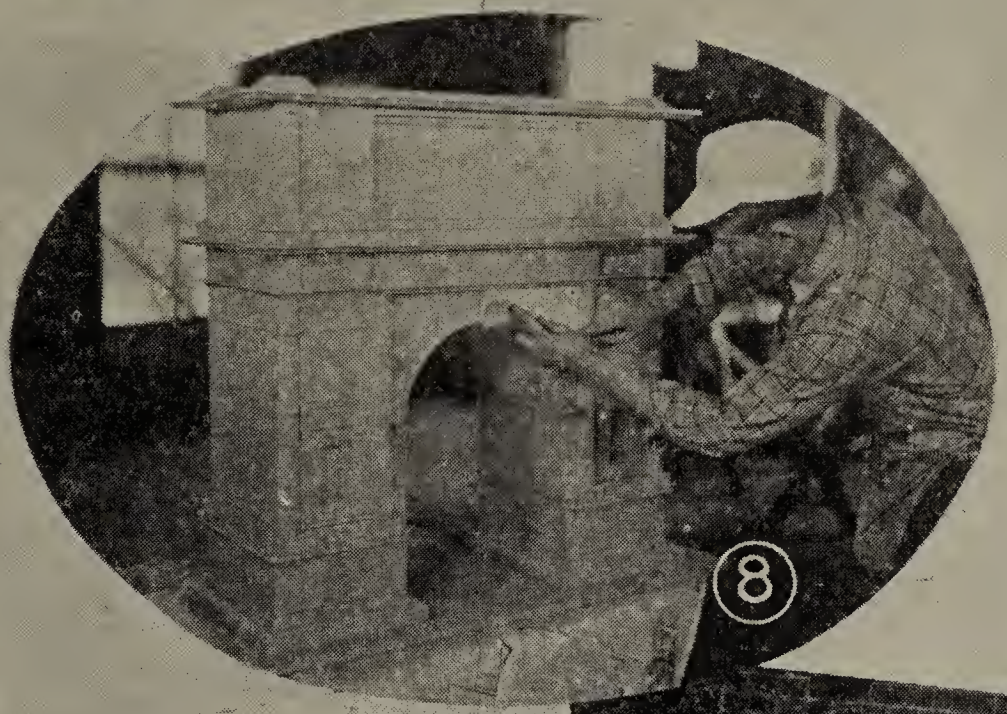

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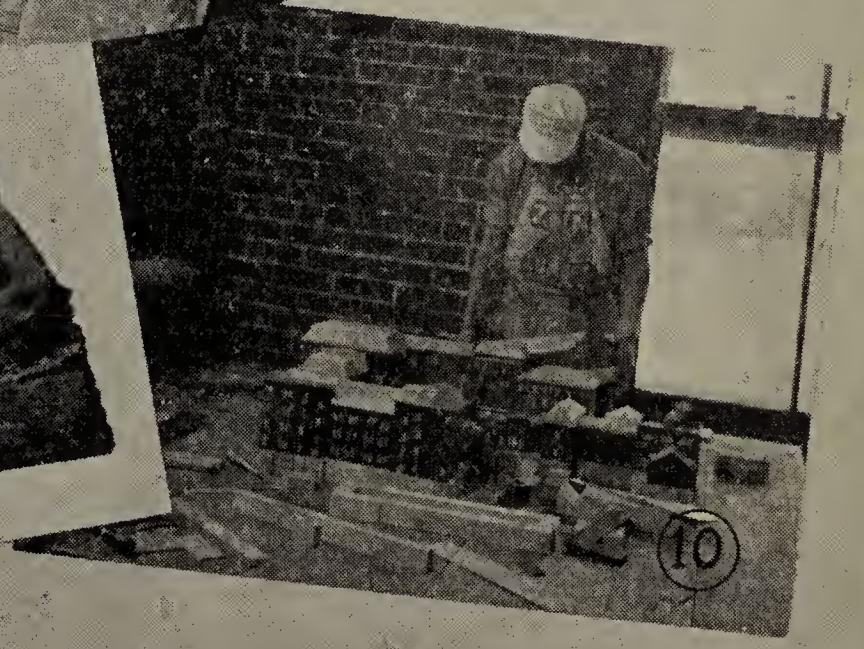

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6. A MODERNISTIC HOUSE—A replica of a modernistic home, constructed with corner windows and glass brick to admit more light; an upper and lower sun deck for entertainments and gatherings is shown. Length of model—32¼", width—34½", height—16¼".

7. FIVE TYPES OF GULLY CONTROL—In this model the artist has very cleverly shown the five methods of controlling gully erosion. They are as follows: (from left to right), by a series of dams, by fastening logs together, by vegetation, by a stone dam and by means of posts bound together with wire. Length of model—78", width—27", height—6½".

8. THE ARCH OF TITUS—The workman is placing a spandrel on one of the most famous of the memorial arches. The original arch is in ruins; this is a restored model. Height of model—35", width—17½", length—39½".

9. SERPENT MOUND—This is the most typical effigy of the mound builders to be found in the United States. It is built upon a high precipice and is 1300 feet long. Length of model—35".

10. A REPLICA OF OHIO STATE SCHOOL FOR THE BLIND—A workman is just fixing the girls' dormitory in place. Since this model has been started, scores of old students have requested an opportunity to "see" for the first time the school in which they spent several years. Model of campus: Length—74", width—72", height of building—10".

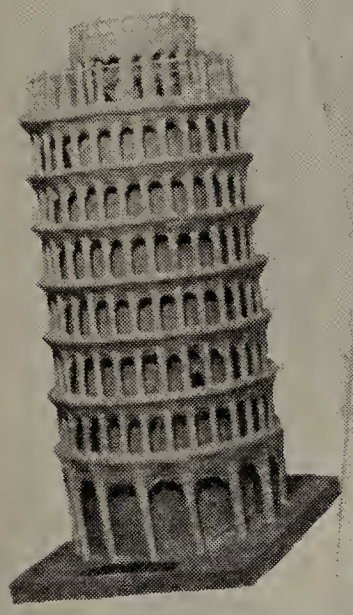
11. BIRD MODELS—All the birds are made life-size in high relief for comparison. The embossed braille tag gives the name and length of each bird.

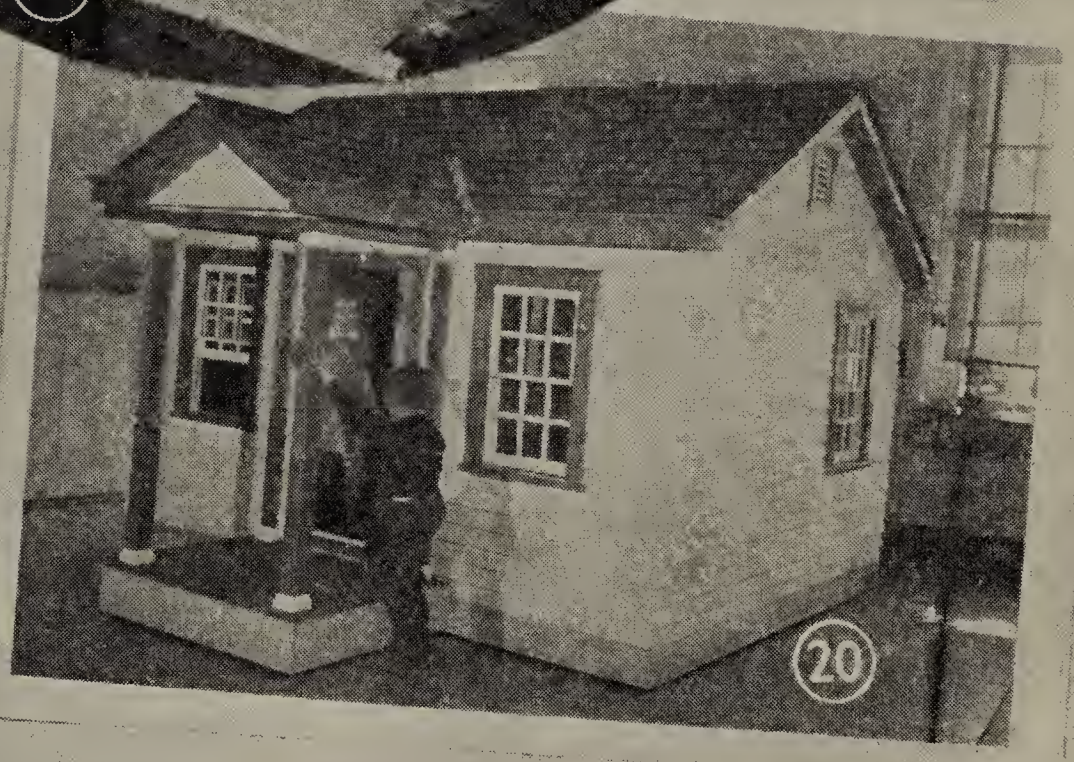
12. SKYSCRAPER—A replica of the new Board of Trade Building, at Chicago, topped by a statue of Ceres, poiscd 612 feet in the air. Length of model—13½", width—13⅝", height—37½".

13. WASHINGTON MONUMENT—"To Americans the Washington Monument is the national symbol of Washington the City and Washington the Man." A landmark visible for miles by day or by night when it is illuminated by brilliant flood lights. Height of model—32½".

14. THE LIGHTHOUSE—"Send a beam across the way." One blind pupil reports that never before did she know what that line of the famous hymn meant, until she had "seen" the model of the lighthouse. Height of model—26".

15. SALISBURY CATHEDRAL—Salisbury stands alone among English cathedrals for unity of design. Very restricted use of Early English style, as it was practiced from A.D. 1220 to 1258. Length of model —39½", width—32", height—36½".





16. LINCOLN'S CABIN—This model represents the birthplace of Abraham Lincoln in exact detail, even to the same number of logs. The dirt floor, the fireplace, chimney and furniture are all in keeping with the original home of "Honest Abe." Length of model —34½", width—28", height—27".

17. DOMESTIC ANIMALS—The four animals; the the horse, the cow, the hog and the sheep are made in high relief but scaled down in size. Each animal is made in the proper proportion to the other. The rooster and hen are scaled together.

18. CAPE COD COTTAGE—The origin of the type of home know as the Cape Cod Cottage is very obscure. Throughout the years the general characteristics of the Cape Cod Cottage have been retained. However, modifications are inevitable. This model is a modernized version of the old type of home. Length of model—34", width—26", height—22½".

19. LEANING TOWER OF PISA—This celebrated marble bell tower in the Italian city of Pisa is worthy of rank among the seven wonders of the modern world. Begun in 1174 and completed in 1350, the structure commenced to dip after the first three galeries had been constructed. Height of model—36".

20. "GOOD MORNING, NEIGHBOR"—This playhouse is fully equipped, consisting of a living room, dining room, bedroom and kitchen. Many problems dealing with home life are solved here directly by means of this "make believe" home.

Visual Aids in the Teaching of Geometry to the Blind

David H. Morgan, Ph.D., and J. A. Wellington*

In a recent paper by E. J. Waterhouse before the thirty-fourth biennial convention of the American Association of Instructors of the Blind, a need, consciously or unconsciously felt by many teachers of mathematics, was pointed out—namely, that of equipment for the mathematics laboratory. Due to the limited experiences which the blind have had with objects commonly accepted by seeing pupils, their misconceptions of familiar objects are at times startling even to the experienced teacher.

With the idea of making geometry more real and less theoretical and of producing understanding rather than memorization, various appliances have been constructed in the shop at the California School for the Blind. These devices have been designed to aid the pupil in "seeing" or visualizing the problem under consideration. There is no experimental evidence to prove that they actually produce more significant learning; merely the subjective judgment of the teacher. However, the pupil can construct figures with this equipment and may be presumed to know as much of the subject as the seeing person who does likewise. The purpose of this article is to describe what has been done, with the hope that, through the cooperation of the various schools, materials adequate for the teaching of mathematics may be developed.

The devices which have been designed may be divided into two general categories: those for illustrative purposes and those for construction. The illustrative materials may further be divided into two classes, general and specific. The general group consists of those models of triangles and quadrilaterals which are used in arithmetic and algebra as well as in geometry. Various rigid models of all types of triangles and quadrilaterals are included (examples in Fig. 1) with braille names in order that the pupil may teach himself to identify the different figures. Some of these are solid; in others, three-sixteenths of an inch maple strips, one-half an inch wide, represent lines. In addition to the rigid models, there are figures, fastened by bolts and wing nuts, in the sides of which have been drilled holes at intervals to permit the pupil a certain degree of freedom in the manipulation of the figures. These models are used to illustrate, among other things, various types of angles—right, straight, adjacent, alternate, opposite, complementary, supplementary, etc. A protractor (Fig. 1) has been designed for illustrating angles and differences in angles, as does the protractor used by the seeing. It is made from one-fourth inch plywood cut in a semicircle with a radius of five inches. Grooves, white lines in the figure, extend from the center to the circumference at 0°, 90°, and 180°. Shorter grooves, numbered in braille, mark each fifteenth degree; still shorter grooves divide these sections into three equal sections of 5° each. For illustrating, or measuring, angles of various sizes, a bar can be rotated around the center of the semicircle and fastened in place with a wing nut. The pivot of the bar is a disc which rotates in a socket; one edge of the bar connects the center with a point on the semicircle. The edge of the bar can therefore be made to coincide with any groove.

The specific illustrative materials are used in clarifying the problems, constructions, and theorems in the text. Departing from the usual

* The writers are indebted to Dr. Richard S. French, Superintendent of the California School, for administrative assistance and encouragement in this work.

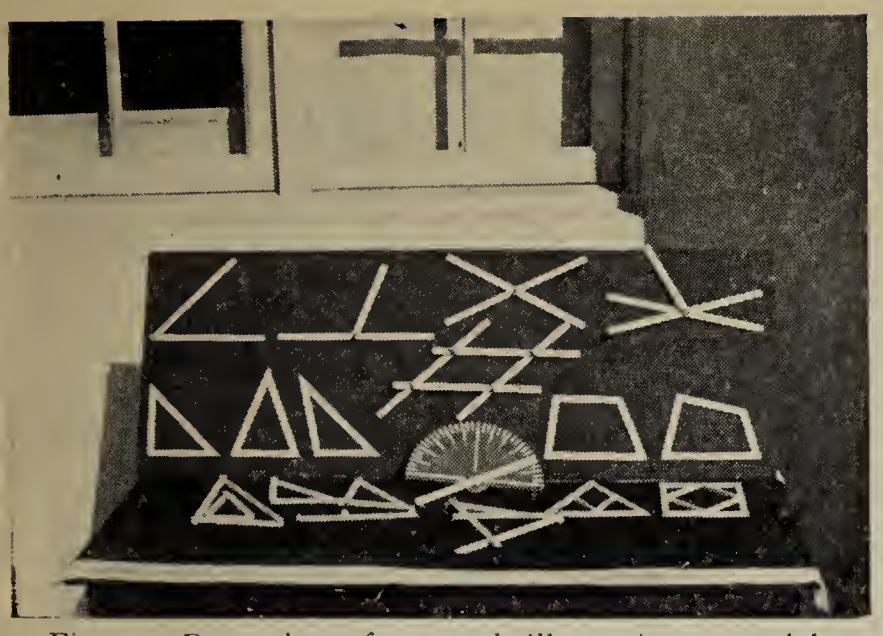


Fig. 1—Examples of general illustrative materials

procedure of using raised lines, it has been found that a groove, about three-sixteenths of an inch wide and one-eighth of an inch deep, is more practical. The figures are cut in three-eighths of an inch ply wood, thirteen by fourteen inches in dimensions (Fig. 2) with three-sixteenths of an inch holes representing points. The compass used in conjunction with the boards is made entirely of wood and is used for demonstration purposes only. The essential feature of this compass is the construction, which permits the legs to be perpendicular to the boards so that its "points" fit in the "points" and grooves on the boards or the ruler. With one end inserted in the "point," the other can be made to trace the arc or circle in the board. Each side of the compass is a parallelogram, the vertices of which are pivoted, and it is made rigid by tightening a wing nut at a vertex common to both parallelograms. It has all the degrees of freedom found in the regular compass. A ruler with holes at inch intervals is used for determining a radius of one to twelve inches.

At present, examples are available for the construction of the following: a triangle, given the three sides; an equilateral triangle, given a side; an isosceles triangle, given the length of the equal sides; an angle equal to a given angle; the bisector of an angle; the perpendicular bisector of a given line; a line perpendicular to a given line at a given point; a line perpendicular to a given line from a given point; and the division of a circle into quadrants. Examples of a circle with radius, arc, and chord lettered in braille, are also available.

For actual construction work, a board of celotex is furnishd each individual. Heavy braille paper is fastened to the board with thumb tacks. A compass, markers, ruler, and straight edges complete the equipment. The marking end of the compass is a stationary piece of galvanized iron about one-sixteenth of an inch thick and one-half of an inch wide at the top, but tapered to one-fourth of an inch at the bottom and rounded to prevent the paper from tearing. The desired radius is obtained by sliding the other arm along a bar nine inches in length. When the desired radius is obtained, the compass is made rigid by tightening a set screw.

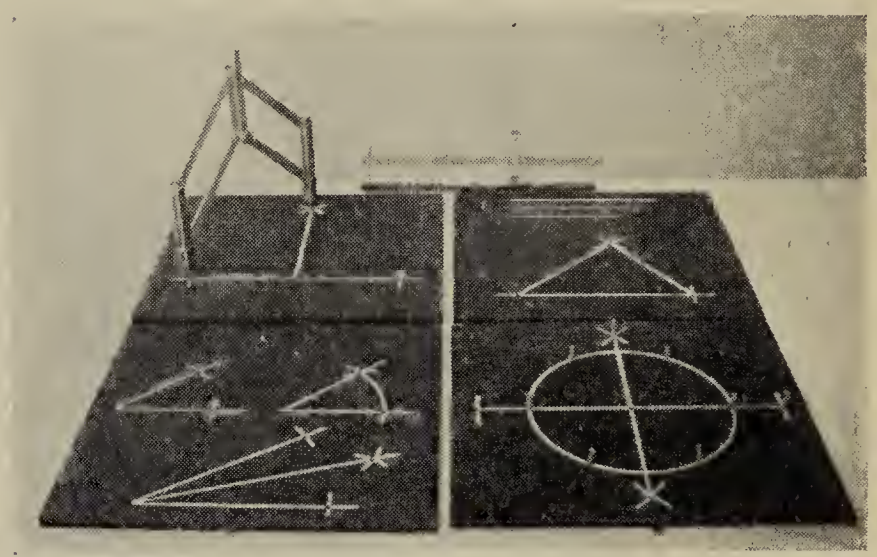


Fig. 2—Examples of specific illustrative materials

For marking the constructed figure, braille lettered thumb tacks, the wire projecting about one-eighth of an inch above the head, serve as points. The movable arm of the compass has a hole in the bottom through which the piece of wire in the top of the marker can be inserted. With the adjustable end of the compass firmly placed on the point and with the marking end of the compass vertical to the paper, an arc or a circle may readily be described by exerting a slight pressure upon the marking end as it is rotated around the point.

A straight line is drawn by the use of a "drawing stylus." This stylus is similar to the marking end of the compass; a little longer, however, to permit a firm grip upon it. The straight edges are a "T" square, a rigid figure similar to the "T" square but

making an angle other than ninety degrees, and a figure adjustable by means of a wing nut at the intersection of the horizontal with the vertical strips of wood. These aids have been found to increase substantially the accuracy of the straight lines, since they can be held more firmly to the paper than an ordinary straight edge.

The figures, after construction, can be "seen" on *either* side of the paper. The depressions made by both the compass and the "drawing stylus" are sufficiently deep and wide to be discerned readily. It is of interest to note that several pupils who were not taking geometry received the impression of two thin lines close together when they were asked to interpret a construction. However, they could follow the figure easily. The reverse side of the paper, of course, shows the customary raised lines, although it has not been found necessary to reverse the paper. The advantage of using only one side of the paper is evident in that the pupil may follow his work without removing the paper from the board at various times to check on the construction. Also, if the paper were reversed, the figure would likewise be reversed and unlettered.

As stated at the outset of this article, all of these devices are still in the experimental stage and are being tried for the first time this semester. The results seem to justify the considerable amount of time and the slight expense which have been devoted to them.

(*Continued from page* 65)

"For the first time in my life, I learned the real difference between a colonial type of house and one of modern design. I learned how a skyscraper towers up into the air above other buildings.

"In the past, I have walked around buildings and felt the exteriors of them, but it was impossible to get a true conception of the whole.

"Last summer I toured through France, Italy, and Germany, visiting the greatest cathedral in the world. But yesterday, feeling that small model of a church, I learned more about the beauty of them, the spires and the steeples than I ever knew before."[5]

A lighthouse, a cathedral, a skyscraper, a modern home or a log cabin are not merely words now. Their descriptions through the use of models have been made tangible and therefore clearer.

A special room has been arranged for storing the models where the teacher may go and receive the one she desires in very much the same manner in which she would go to the library to secure a book.

We are not engaged in making toys but educational devices so that many things that have never been "seen" by blind pupils before may be visualized now for the first time. It is our aim to make it possible for a blind pupil to get the correct conception of things beyond the reach of his finger tips. To this extent we have been successful, judging by the enlightened faces of those who have examined the models. Their enthusiasm is contagious. "Oh, I never knew it was like this!" "For what is this used?" "How interesting!" "It's wonderful!" These expressions are continually heard as the blind child's fingers rapidly take in every detail of the model.

Thus, it is our sincere hope that we have made it possible for another beam of light to shine through a sea of darkness.

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4. Ross, Mary—Fourth grade teacher, O.S.S.B.
5. *The Columbus Citizen,* November 5, 1938, page 1.

Commencing with the March issue *Talking Book Topics* will appear as a Talking Book as well as in inkprint form. It will be recorded on one disc and will benefit many who have been unable to make use of the inkprint edition. The subscription price to the recorded edition will be $1.00 per year.

Dr. Allen Says:

MY FIVE MINUTES' PRELIMINARY TALK TO A VISITING CLASS OF STUDENTS FROM THE BOSTON TEACHERS COLLEGE

DO YOU WONDER why your professor brought you here? He wants you to realize, before beginning to teach, how and how well pupils who are blind can do things which you and I used to do at school, depending chiefly, as we did, on that queen of the senses—eyesight; likewise, that "obstacles are things to be overcome."

As you know, our pupils use books, reading them with their fingers. You, too, could read so if you had to or if you wanted to hard enough. You already do more things without looking than you are aware of; and could do many others. A fellow superintendent once challenged me to pare an apple without looking. Both succeeded but were uncommonly slow about it. I suggest that each of you try this apple-paring experiment. Success will correct your notion that blind people are especially wonderful. Think what a wonderful thing we all did when we learned to talk. We shall never do anything more extraordinary.

You and I learned much from pictures. The teaching "pictures" of this school are chiefly objects that may be handled—stuffed animals, and other specimens in great variety. For the study of geography, history, and geometry we provide maps and figures that are tangible. If, however, a pupil is taught how to shape plasticine into a simple map or diagram and does it himself, he may thus clarify his conception of his project. You will presently visit a class in map making under a teacher who has roused in her pupils a desire to do this; also a physics room where instructor and pupils together are experimenting with the simple apparatus they have made. Nobody fully understands a thing until he has given expression to it. No teacher really knows a subject until he has taught it.

An occasional boy or girl of ours goes to college. You may be sure that such a student has early learned to heed what he hears. Of your own pupils it is those who concentrate who will do best at school and probably best in life. Now I want you to apply this lesson to any one of your pupils who may possibly be forbidden to use his eyes for a time for reading. Don't send him here; but explain to him and to his parents that by continuing at your school, listening intently, and reciting with the rest, he not only need not drop back but may even acquire unsuspected power which will enable him to do better than before. The late President Eliot of Harvard had serious eye trouble in his sophomore year; yet, by having his lessons read to him for some months until his sight improved, he not only lost no time but was graduated second in his class. Wise old Socrates claimed that the gods sell goods for sweat.

You may be surprised at the variety of our departments—intellectual, music, manual, physical, and domestic—yes, even more subjects than at most schools. You may not approve of our long school day, from 8-12 and from 1:30-5, and yet this is entirely feasible because of the relief which frequent change and variety of occupation give. Do you know that our teams sometimes beat the local high school teams in field sports?

Yes, your professor and I believe your visit here will broaden your conception of facts and conditions, which should make you a more understanding teacher than before. Your coming will help us, too. You will never again just pity the blind. Perhaps you will sometimes give them work, which is "The boon they ask of their fellow men."

Now let me conduct you about.

Our Bookshelf

Kathryn E. Maxfield, Ph.D.

For which type of social organization do we wish to educate—one in which individual initiative is entirely crushed by a despotic society, or one in which individualism runs wild or one in which there is room for both the individual and society?" (Quimby, Neil F. "The Curriculum in Schools for the Blind," *A.A.I.B. Proc.,* 1938, pp. 27-34.) This question sets the tone of Mr. Quimby's stimulating, well integrated paper at the 1938 A.A.I.B. convention. Every so often we need to re-think our educational procedures in terms of the aims of our society rather than in terms of specific techniques. After stating briefly the outstanding educational philosophies of the past, Quimby forcefully criticizes the mechanistic attitude dominating education in this country for many years. Methods and techniques are not neglected in this paper but they are placed in their proper perspective.

Among any group of pupils, and especially among those in a school for the blind, certain personality problems are to be found which complicate the teacher's work considerably. Among these are the various speech defects which have a high degree of prevalence among the visually handicapped. It may be remembered that in 1926 Dr. Sara Stinchfield Hawk reported that among the blind and partially seeing children whom she had tested she found 49 per cent in need of remedial treatment whereas among the seeing children in one city school system only 18 per cent needed such training. (*A.A.I.B. Proc.,* 1926.)

Recently, Dr. Hawk and Mrs. Edna Hill Young have published a book which presents their work in the use of kinesthetic methods for developing speech in seeing children. (*Children with Delayed or Defective Speech*. Stanford Univ. Press, 1938, pp. xvi & 174.) Since this kinesthetic method is still in its infancy it is not a safe one for use by an untrained person. However, it holds great promise for corrective speech work with the blind, the deaf-blind, and the low-visioned. We shall look forward with interest to the growth of this particular method of speech instruction. Certainly, everything possible should be done to save visually handicapped children from the further disadvantage of poor speech.

An excellent general text-book on speech has just been published. (Eisenson, Jon. *The Psychology of Speech*. F. F. Croft & Co., 1938, pp. 280.) For the most part this book has been written with scientific objectivity in spite of the wide variety of topics discussed. There is only one section in which Eisenson drops his objective attitude to write dogmatically on the basis of personal experience, and that is in his discussion of the blind, to which he gives seven pages. In this one section alone does he fail to qualify statements which bear the evidence of his own emotional reactions. One cannot help but wonder what type of blind student has been in his classes that he should unconsciously present such a biased opinion. All too many blind college students are quite as lacking in physical and mental tonus, and have quite as many personality failings, as Eisenson indicates. All too many are likewise excessively egocentric. However, these pages do misrepresent educated blind people, especially those who are congenitally blind.

Quite a different publication is that by Dr. R. S. French, *An Introduction to the Problems of Sight Conservation: A Handbook for Teachers and School Executives.* (State of Cal. Dept. of Education, Bull. No. 3, Feb. 1, 1937, pp. 76.) Although written primarily for sight conservation teachers, this pamphlet should be on the library table in

(*Continued on page 76*)

Dogs Go to High School

Grace Gentry

Marshall High School has two unique pupils in the Department for the Blind this year. Perhaps pupils is a misnomer, for although they do attend school and classes regularly, they already have their diplomas. They are Sirius and Carlo, Master's Eye dogs who daily bring David Nagle and Billy Roy to school. And their diplomas are blue crosses against a white background, fastened to their harnesses, signifying that they have been trained and are fully qualified to lead their blind masters.

This is probably the first time in history that guide dogs have been used to bring pupils to a public high school. Sirius and Carlo are the gift of Bishop Sheil and the Catholic Youth Organization. A third dog, Utz, entered the University of Chicago with his blind master, Robert Scanlon. The three boys represent three religious faiths: Jewish, Catholic and Protestant. They spent a month in Minneapolis last summer at His Master's Eye training school learning to work in harmony with the dogs. They were trained by Mr. J. L. Sinykin, owner of the school. In the course of their training, Mr. Sinykin took the boys through all sorts of tests and experiences such as they would be called upon to perform in their daily life after they got home. They crossed the streets of St. Paul and Minneapolis in the busiest traffic. They went through revolving doors, they entered hotels and stores and had dinner in prominent restaurants, always with their dogs beside them.

To better understand the problems of the dogs in school, one must first understand the general plan of caring for the blind children in Chicago. Pioneering with the plan of educating the blind in regular schools among seeing children, the Chicago Board of Education, in 1900, appointed John B. Curtis to the post of Supervisor of the Blind. Under his leadership centers were established in several regular schools. In each school, a specially trained teacher was put in charge of a group of blind children. As soon as they learned to read and write braille they were sent to the regular classes to recite with the seeing children. This plan was very successful and has been followed since its establishment. The blind children return to the braille room for supervised study and to do their written work, which is assigned to them by the regular class teachers. The braille room

Billy and Carlo

David and Sirius

is equipped with standard typewriters, braille writers, raised maps and globes, number boards for arithmetic problems and a large library of braille books.

David and Billy are students at the John Marshall High School, whose enrolment numbers five thousand students, fourteen of them blind. Their classes include English, Latin, physiology, geometry and history. The trip to school from the home of each of the boys involves taking two street cars, crossing several busy streets and walking at least a

block. After they get to school their class program necessitates that each boy go to at least five different classrooms. A busy city high school with such a large student body means crowded corridors and gay, bustling throngs of boys and girls.

Let us visit this high school and see the boys and their famous dogs. About eight-fifteen Billy and Carlo get off the street car in front of the school. Carlo leads Billy to the entrance of the building and takes him straight to the braille room. He goes at once to the corner of the room where he stays while Billy studies. Billy takes off the harness, snaps the leash to a hook on the floor, gives Carlo a friendly pat and tells him to lie down. People may come in and out of the room but Carlo does not move. Billy goes about his business in the room, and prepares his lessons. As the bell rings at the end of the period, Billy gets Carlo's harness, and Carlo springs to attention. Eagerly he sticks his head through, for he loves to go places with Billy. Proudly he leads him through the halls and into the physiology room, where at a command from his master he lies on the floor at the feet of the boy. The class proceeds—no one pays any attention to the dog and he ignores all but Billy, and at the end of the period he is ready to take Billy to his next class. And so through the day, boy and dog go about their business, proud and happy. What boy doesn't love his dog? And what blind boy wouldn't love such a dog as Carlo—who in addition to being all that a regular dog could be, is also eyes for his beloved master! Carlo's devotion to Billy is remarkable. But as the attention of the visitor shifts from Billy and Carlo to David and Sirius, he sees another example of perfect devotion. Sirius follows, with David, a program similar to that of Billy and Carlo. He, too, has his special corner in the braille room, and he, too, lies by David's side in the regular classrooms.

Are the dogs a problem to the teacher and school? No! Any worth while project requires some careful planning and attention. But after is is started, it will carry itself. This is true of the dogs. After the first week in school, the dogs fitted themselves so well into the scheme that one hardly knows they are about. Certain rest periods are provided when the boys take the dogs out into the school yard for a run. At noon, the dogs are harnessed and the boys go for a long walk.

The responsibility of owning such a precious and valuable dog and of being responsible for keeping him happy and in good health has been one of the best things that could have happened to the boys. The realization that with their dogs, they are free to go about and do almost limitless things, has freed their minds of fears and opened new horizons for them.

Adjustment to environment is one of the important aims of education. The blind live in a world of seeing people and must learn to adjust themselves to that world. Educating the blind among seeing children helps to accomplish this. Giving them dogs to serve as eyes adds another link to the chain which binds their lives to that of the seeing world.

(*Continued from page 74*)

every school and class for the blind. The section on "The Visual Organ" discusses with unusual clarity the eye and its most important structures. The other sections of the book are equally valuable, especially that on "Defects of Sight; Danger Signs and Correctives; Drugs Likely to Prove Injurious to Sight." Because of what is being learned regarding the effects of drugs on the visual apparatus, French's comments on various drugs are timely, although probably not final.

Legislative developments pertaining to schools for the blind are being reported in "Legislative News on Work for the Blind," a pamphlet published twice each month by the Foundation. Comments and suggestions regarding this service will be welcomed. Persons wishing additional copies can secure these upon request from Mr. MacEnnis Moore.

Education of the Handicapped—A Review

R. S. French, Ph.D.

Education of the Handicapped, Volume One, History, by Merle E. Frampton, Ph.D., LL.D., and Hugh Grant Rowell, A.B., M.D., Editors, World Book Company, Yonkers, N. Y., 1938, pp. xii & 260, $2.00.

In reviewing this composite offering in the field of special education one is tempted to be trite and to start with that shop-worn phrase about "filling a long-felt want." For in a very true sense this brief volume does what no previous book has done, presents in readable and succinct form a comprehensive treatment of one of the most fascinating fields of educational thought and endeavor from a broadly historical point of view.

The editors begin their "Introduction" with a most apt sentence from Reisner's *Educational Foundations,* which in effect is a definition of history in functional terms. Chapter one undertakes the classification of handicapped groups and then proceeds to a general historical statement, chiefly of attitudes on the part of society toward the defective or deviate types. In general such attitudes until very recently have not been favorable even to the survival of the seriously deviant, much less to according them a real as opposed to a created or fictitious place in economic and social life. At best an attitude of mercy and of toleration may have developed from time to time, but exposure, neglect and exploitation were the more common lot of the deaf, the blind, cripples and other "unfortunates."

Following chapter one, "The Visually Handicapped," "The Hypacusic" (auditory defectives), "The Handicapped in Speech," "The Crippled," "The Undervitalized, Tubercular and Cardiac," "The Mentally Handicapped," and "The Socially Handicapped" have each their separate chapter. The text closes with a query chapter, "Where Next?" and the volume ends with an admirable selective bibliography which one could wish a bit more exhaustive. Through these chapters a certain unity of arrangement runs, though the composite authorship betrays itself in a marked inequality both of substance and of style. Apart from its rather unsatisfactory classification and definitions, the chapter on the hypacusic is outstanding, with both excellent narrative and frequent evidence of penetrating insight. The chapter on the mentally handicapped is almost equally good. The chapter on the visually handicapped makes up in interest what it lacks in plan and coherence. Chapters four, five and six lack coherence and convincing historical continuity; this is undoubtedly due largely to novelty of subject matter and lack of any considerable historical background in these fields.

Little as the reviewer likes to assume an attitude of meticulous criticism, he feels that certain shortcomings should not go unnoted. I find, for instance, two dates given for Herodotus, one of which was evidently taken from my "From Homer to Helen Keller" and did not refer to Herodotus at all but was the date of King Amasis II of Egypt. As an instance of doubtful "substance" I will cite only a single paragraph on page 38, under the heading, "The studies of von Gaheis." Not a single study of real scientific value can be found to back the statements in this paragraph. They are uniformly statements of opinion founded on imperfect personal observations and cannot stand without far-reaching qualification. The chief reason for the separation of sight-conservation cases from the totally and partially blind (braille readers) is one of technique in teaching and of equipment and lighting. Similar strictures might be put on a few of the general statements regarding so-called "oral methods" for the deaf and hard of hearing.

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The Harvard Course on the Education of the Blind

Genevieve M. Haven

Education of the Blind is a course offered by the Harvard Graduate School of Education, designed to give background on the subject of blindness to those students who wish to specialize in work for the blind. The majority of the students taking this course, which has been functioning since 1925, with Dr. Edward E. Allen, Harvard lecturer, conducting it, have become teachers, either of blind or of low vision children. Occasionally, students have been attracted by some other field than that of the classroom teacher, such as physiotherapy, corrective speech, or social work among the adult blind. Whatever career has its appeal in service to the blind, "Education of the Blind" is a foundation stone.

Qualifications for admittance to the class that begins every autumn with the academic year at Harvard, are high. A bachelor's degree from college or normal school is desirable for all candidates, and a year of experience in teaching seeing children is very acceptable preparation. The fee is fifty dollars, payable to Harvard University upon registration.

The Harvard class of the present year numbers fourteen men and women, representing eleven states of the United States, and the country of Japan. Six members of the class are recent graduates of well-known institutions of learning: Smith, Radcliffe, Mt. Holyoke, Wellesley, The University of Pennsylvania, and Princeton. Others are graduates of smaller universities or colleges or of normal schools.

Every individual is given special consideration according to his purpose in taking the course, which is sometimes clear from the beginning, but more often unfolds with practical experience. This year there is the very frequent aim of becoming a skillful teacher in the elementary school, the highly creative one of finding more adequate means of teaching science and mathematics to the blind, the cultural purpose of developing the musical ability of our pupils, and the equally rewarding one of learning how best to teach them the correct use of the English language, and the enjoyment of its literature. Finally, there is the objective of a home teacher, on leave of absence, to enrich her practical experience by our survey of work with the blind.

It is, indeed, the lectures by Dr. Allen, our distinguished leader, and by men and women from outside the schools, expert in knowledge of blindness and the prevention of it, that are the center of values. No matter how widely varied the special interests of students may be, all receive an historical viewpoint of blindness, and a frank presentation with the opportunity for fearless discussion of the chief problems that face blind people, young and old.

"Special Methods," a Perkins course, making use of observation and practice teaching, with lectures and reading, completes the year of preparation for service to the blind. Dean Holmes of the Harvard Graduate School of Education has told the sponsors of it that for persons specializing in work for the blind, this course, like "Education of the Blind," may also be counted towards the degree of Master of Education.

Residence in the cottage families of Perkins Institution during the period of study affords an opportunity to learn much and to contribute helpfulness. Correspondence regarding scholarships for living expenses at the school should be addressed to Dr. Gabriel Farrell, Director.

DIRECTORY OF PERIODICALS
of special interest to the blind.
Price, fifty cents, postpaid.

Missouri School Students Broadcast

DURING the past school year pupils of the Missouri State School for the Blind presented a series of radio programs, using original scripts written by students of the school's radio workshop course.

They obtained copies of the radio series, "Interviews with the Past," from the Office of Education Script Exchange. When the scripts arrived, the students learned one of the first lessons in radio technique—that a great many words can be spoken in fifteen minutes. They had received ninety pages of printed material to be put into about one hundred pages of braille before they could begin rehearsing.

Their superintendent, Mr. S. M. Green, provided the braille paper and assigned the task of copying the scripts in braille to one of the students, Roberta Emley, who was acting as assistant in the speech department. This work took hours of time, as every word of the six scripts had to be read aloud and intervals of time allowed while the matter was typed into braille, using not the old method of slate and stylus, however, but the modern braille writer.

In the meantime, the teacher of speech arts, Anna McClain Sankey, had written to many of the radio stations in St. Louis, asking for educational time. The station managers seemed a bit doubtful at first, not knowing what the blind could do to overcome broadcasting difficulties. Station WEW of St. Louis University, however, allowed them time, and the group began rehearsals. When the memory work and the characterizations were satisfactorily prepared, the programs were broadcast from one room in the school to another, by means of a small portable broadcasting unit, thus acquainting the students with the microphone, the elements of timing, studio silence, the danger of blasting, the avoidance of sibilant sounds, and the necessity of good diction.

These broadcasts were listened to and commented upon by the students in the radio workshop group, and proved of great value to the members of the other casts. The ears of the blind are recording instruments, and this ear training provided motivation for better speech in other classes.

At last, amid excitement throughout the school, the weekly broadcasts began, and were a great success. The students memorized their parts, one member of the cast following the script in case of emergency, and this seemed to give a natural fluency of speech which is often missed in performances given by seeing persons.

This work in educational radio procedure, which has now continued for two years, helps the student and keeps him happy by allowing him to participate in those types of activity in which his responses are adequate. Opportunities for self activity help to establish the blind as a part of the seeing group.

Through the social adjustments which must be made by the student in these trips to the radio stations and in broadcasting, his personality is being developed. In the writing and producing of original scripts, the group is giving a more definite idea of the capabilities of the blind, and is developing script writers of some ability. Would it not be well to do more of this sort of work in other schools for the blind?

(*Continued from page 77*)

In particular I find much of the sentence structure very unsatisfactory. As Langlois once remarked of history in general, obscurity of meaning and neglect of style should not be considered marks of scientific accuracy and penetration but quite the contrary. As a single instance the last sentence on page 7 requires at least three explanatory sentences to make it thoroughly intelligible. The average layman would be lost in its

maze of implied definitions. An attempted condensation is an excuse, but hardly a legitimate excuse, for such a distressing "telescoping" of words. A check up on historical fact would also have been highly desirable.

These strictures must be taken as bearing only on minor points of structure or statement. Taken as a whole this volume is both a fine pioneering venture and an inspiration to further study. It should be included in the basic reading of every introductory course in special education and should form a part of every library on the handicapped.

The Teachers Forum

for

Instructors of Blind Children

Address all communications to

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American Foundation for the Blind

15 West 16th Street

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The Editor will not be responsible for opinions expressed in signed articles

MARCH, 1939

A new departure, the inclusion of illustrations, has been attempted in this issue of *The Teachers Forum*. Because of the expense involved, it will not be possible to use these regularly, but if they are appreciated others may appear from time to time. Your comments in regard to this matter will be appreciated.

W. P. A. projects for the construction of educational models for the blind have been instituted in a number of our schools and Mr. O. J. Hill, who presented this matter at the Sectional Meeting on the Blind at the Meeting of the International Council for Exceptional Children, in Detroit, gives us a good article on the Ohio project. By request, only minor editorial corrections have been made. It was impossible to use all of the splendid illustrations submitted.

It is believed that many of you will be interested in a new page, "Our Bookshelf," by Dr. Kathryn Maxfield, which we hope to include regularly in future issues.

The article by Dr. Morgan and Mr. Wellington is the kind which we should like to publish more often—one telling of progressive developments growing out of classroom situations which confront other teachers. Will not more of our readers use the medium of the *Forum* to pass results of their experience on to other teachers?

We are glad to call your attention to the Harvard Course and to the changes in its content and student personnel which have taken place during the past fourteen years. From a recent visit the writer can testify as to the promising nature of this year's class.

A ten-year Index of *The Teachers Forum* has been prepared and may be obtained by subscribers without charge upon application to the Foundation.

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THE Teachers Forum

FOR INSTRUCTORS OF BLIND CHILDREN

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Practical Hints for Testers

Samuel P. Hayes, Ph.D.

When the Binet-Simon Test of Intelligence was first made accessible and the importance of mental testing was brought home to us through its enthusiastic reception by leaders in the fields of education, social work, juvenile delinquency and eugenics, a wave of activity spread over the United States which flowed through schools, courts, clinics and institutions for defectives and swept all before it, carrying away not only some of the debris of unscientific tradition but also many valuable principles and safeguards. Summer courses were established where many persons untrained in the practices of scientific procedure were in a few weeks turned out as Binet testers or "Bineters" as they were called. Spreading out over the country they advertised and sold their wares as though they were medical panaceas. Outraged parents, disillusioned school principals, social workers and academic psychologists protested loudly and the counter attack put the whole testing movement in jeopardy. Fortunately, science, rather than emotion, won the day; and when the Stanford Revision of the Binet-Simon Test appeared in 1916, with full instructions for giving the test and wise precautions to prevent the more common errors, keen observers realized that mental tests had come to stay, and that by constant study of results, improvement of methods and the training of efficient testers, the good results of testing might be preserved and the bad results largely eliminated. In many colleges full semester courses in testing were established, and in some of them a full year of experimental work in a psychological laboratory was made a prerequisite for the testing courses.

Achievement tests might have had a similar history except for the "horrible example" of the Binet test, and in schools where this history is not known, one now hears of teachers who, enthused with the many obvious advantages of objective tests in their own school subjects, have constructed and administered true-false, best answer or completion tests which have been so unsatisfactory that they have swung back in confusion to the old essay type of examination and condemned the whole testing movement. This paper is an attempt to prevent such disillusionment through a discussion of the main principles of good testing, and a display of the chief hazards in testing the blind.

As a considerable number of teachers in schools for the blind are now interested in giving group tests of intelligence and school achievement, we will first discuss the basic principles for administering tests and then indicate what tests are now available for use with the blind. After this we will outline the precautions necessary in adapting other standard tests for use with the blind, giving examples of good and bad results already obtained. Our final section on the interpretation of tests is intended for both groups of teachers, those who plan to use tests already prepared for them and those who prefer to make adaptations for themselves.

The general directions given in the World Book Company's manual for administering the New Stanford Achievement Test cover the ground very adequately. This test, it is said, "can be given satisfactorily by any teacher or principal who is willing to follow the directions in this manual conscientiously and who is reasonably skillful in discipline. The tester should possess a pleasing personality and be able to speak the necessary directions clearly and distinctly enough that every one in the test group may hear. . . . Good testing conditions demand that there should be quiet throughout the testing period. Strict obedience and attention on the part of the pupils are absolutely necessary. No questions

should be permitted after the testing begins. There should be a spirit of rapport between the tester and the pupils. No visitors should be allowed. Sufficient assistants should be provided, when large groups are being tested, to see that everyone understands what he is to do and that he has the necessary materials with which to do it, and in order to discourage copying or giving assistance in any way.

"The person administering the test must speak distinctly and at a moderate speed. Undue stress and levity are to be avoided. An agreeable manner, but one suggestive of authority, is essential. Give all commands in a quick, energetic voice distinct enough for all those for whom it is intended, to hear. *Avoid shouting.* Give all directions slowly, with careful attention to emphasis where it is needed. *Follow the directions exactly.* Be watchful, and in so far as possible prevent disturbances within or without the room which might in any way interfere with the work of any pupil. Permit no whispering or copying. Distribute test booklets and administer the tests with dispatch. Systematize the work to avoid delay in administration. Adhere carefully to the time limits. A stop watch is desirable but not absolutely necessary. (The time limits are liberal. Probably many pupils will finish before time is called.) Plan your procedure in detail before attempting to administer the tests. Their administration is easy, but it is necessary to know exactly what to do at each moment of the testing time."

A considerable number of achievement tests are now available for use with the blind, and others are in preparation. A primary source is the writer's *Self-Surveys in Schools for the Blind,* published at the Pennsylvania Institution for the Instruction of the Blind in 1921. This Manual was sent to all schools for the blind and also bound with the *Outlook for the Blind,* 1921, Vol. 15, No. 4, so that it should be accessible in every school library. It contains tests in the fundamental operations of arithmetic and in arithmetical ingenuity, American history, English composition, English vocabulary, verbal ingenuity, sentence completion, word completion, geography, grammatical usage, silent reading, spelling, and rate of writing, based upon popular achievement tests of that period; besides two group intelligence tests, the Pressey Group Point Scale and the Pressey Cross-out Tests. To quote from the introduction: "The tests described in this Manual have been carefully adapted to the blind, used in from 8-10 schools upon about 450 pupils from the fourth grade upwards (by 1925 it had been used in 10 schools upon more than 600 pupils), and revised to meet the friendly criticisms of the teachers who have seen them in operation. We believe that anyone who is intelligent enough to teach school, and who is sufficiently interested to study and follow the directions explicitly, can give these tests with a degree of exactness that will suffice for the usual problems of classification." Apparently we were somewhat ahead of the times for very little use seems to have been made of these tests. When the original issue of the Manual was exhausted, a new edition was considered but in view of the uncertainty of the response from teachers it was decided to bring out new tests from time to time in monograph form through the American Foundation for the Blind and later as articles in THE TEACHERS FORUM. Now that a considerable number of teachers are anxious to use objective tests, the time seems ripe for the revival of the tests in this Manual, for many of them are excellent tests and seem fairer to the blind than some of the more recent tests for the seeing, which involve mechanical processes very difficult to adapt to touch reading. Some of these tests can be given orally and so require no braille material; for the others, braille material will be provided through the American Printing House and supplied to the schools on their quotas, as soon as possible after requests have been received by the writer indicating a demand for the tests.

As the general directions printed in the

Manual contain various hints which will be valuable in all group testing of blind children, they are reproduced here. "That the results of the tests may be comparable with the published norms, the printed directions must be exactly followed, for a slight variation may make a test unexpectedly easier or more difficult. It will be best, therefore, to quote directly from this Manual when giving directions for the tests, using only the words printed in quotation marks. Teachers will find it a great help to try a test through with another teacher as a subject, before using the test in class.

"In each test we have asked that the pupils write name, age, grade, and the date at the top of the sheet upon which they write their answers. This will make the test results much more valuable for later comparisons. If a stop watch is not available for use in the timed tests, teachers should always record on a slip of paper the time of starting each test, since it is very easy to lose track of the time if one is interrupted by a knock at the door or a question from the class. Pupils whose hearing is defective should be moved up close to the tester and all verbal directions should be spoken slowly and distinctly. So far as possible, the tests have been arranged so that they can be given orally to the blind, but where reading of test sheets is necessary, the blind are allowed from two to three times the period set for the seeing. No special preparation or coaching should be attempted before the giving of a standard test, nor any special stimulation applied when the test is given. Pupils should be allowed to write on braille slates, typewriters or mechanical writers according to their preference. No talking or whispering should be allowed, and interruptions and distractions of every sort should be prevented as far as possible. No help should be given in spelling; say, 'spell as well as you can.' The mistakes made will be valuable evidence of the general spelling ability of the pupils. Backward pupils should not be prodded or helped further than is provided for in the printed directions. As soon as a test is completed, papers should be collected at once, to prevent later modifications, and special care should be taken to see that each pupil's name has been written as directed at the top of the sheet."

A second primary source with which teachers interested in testing the blind should be familiar is Dr. Kathryn E. Maxfield's *Adaptation of Educational Tests for Use with Blind Pupils,* published by the American Foundation for the Blind in 1927. Besides carefully arranging the reading and spelling tests of the 1927 Stanford Achievement Tests and the Gray Oral Reading Check Tests, she gave a valuable introductory section on the advantages of standard tests in schools for the blind, a very excellent discussion of questions suggested by the test results, and a section entitled "Miss West and Her Testing Program," which should be very helpful to any teacher in interpreting the results of tests used in her grade to the best advantage of the individual pupils. Braille sets of the Gray Oral Reading Check Tests are now available at the American Printing House and might well be widely used. The 1927 edition of the Stanford Achievement Tests has been superseded by the New Stanford Achievement Tests, published in five equivalent forms—V, W, X, Y and Z—for the seeing, and now accessible in all five forms for use with the blind. After a preliminary tryout at Perkins Institution by Dr. Maxfield in 1933-34, Form V was put into braille by Mr. Francis M. Andrews and used at Perkins in 1935-36; after this, a cooperative study was undertaken by the writer and the testers at Perkins Institution, the New York Institute for the Education of the Blind and the Pennsylvania Institution for the Instruction of the Blind, and full directions for giving and scoring were published in The Teachers Forum, 1937, Vol. IX, No. 5. Braille material for these tests is now available at the American Printing House, but before ordering the braille material, testers should order a sample set of

inkprint material from the World Book Co.

The Stanford Achievement Tests may be considered a third primary source of material for measuring progress in reading, spelling, language usage, literature, history and civics, geography, physiology and hygiene, and arithmetic reasoning and computation. Since there are five equivalent forms of the test, the braille material may be used as review material after testing, and another form of the test used the following year.

The writer is gradually preparing for THE TEACHERS FORUM, reports of the results of the Stanford Achievement Tests in various schools, and the first three reports have already been published under the titles, "Can the Blind Pass in Geography?", "Words are Wise Men's Counters: How Rich are the Blind?" and "What do Blind Children Know?". In each of these articles other tests in the same subjects are discussed, so that teachers may be kept advised in regard to the development of tests in their own subjects, and the results obtained by their use in schools for the blind. Tables of results from any schools or teachers using the tests will be most gratefully received and included in later publications, thus providing a wider base for the establishment of norms of performance by the blind.

Additional tests now available for use with the blind and such printed reports as have so far appeared concerning them are as follows, (before ordering braille material, testers should order a sample set of inkprint material from the appropriate publishers):

Monroe's Standardized Silent Reading Tests, published in three forms—Test I for grades 2-5, Test II for grades 6-8, and Test III for grades 9-12—by the Public School Publishing Co., Bloomington, Ill. Braille material for Form I is available at the American Printing House. Directions for using the test with the blind may be found in the May, 1930 issue of THE TEACHERS FORUM, in which Margaret Owen Thomas has an article on the adaptation of these tests. Class record sheets with keys for scoring and norms for the seeing may be obtained from the Public School Publishing Co.

Iowa Silent Reading Tests: Elementary Test, Form B, published by the World Book Co., Yonkers-on-Hudson, N. Y. Tests 1-4 and 6 adapted for use with the blind by Francis M. Andrews. Braille and directions are available at the American Printing House for the Blind. Key and class record sheets may be obtained from the World Book Co.

Wisconsin Inventory Tests in Arithmetic, published by the Public School Publishing Co. Given *orally* in six schools for the blind. Results reported by Dr. Frieda Kiefer Merry in THE TEACHERS FORUM, 1930, Vol. III, No. 2.

Stevenson Arithmetic Reading Test I, Form 2 (Problem Analysis), published by the Public School Publishing Co. Adapted for use with the blind by Dr. Frieda Kiefer Merry and used in six schools for the blind. Results reported in THE TEACHERS FORUM, 1931, Vol. III, No. 5.

Wilson Language Error Test I, comprising stories A, B, C, published by the World Book Co. Adapted for use with the blind by Dr. Frieda Kiefer Merry, used in grades three through six in two day school classes and eight schools for the blind. Results reported in the Perkins Publications, 1931, No. 10, "Motivating Language Lessons Among Blind Children in the Elementary Grades." Manual of directions, key and class record sheets may be obtained from the World Book Co.

Unit Scales of Attainment, Form A, tests of reading, geography, literature, American history, arithmetic (problems and fundamental operations) and English, published by the Educational Test Bureau, Minneapolis, Minn., Division 2, for Grades V and VI, adapted for use with the blind by Georgie Lee Abel, and results in sixteen schools for the blind reported in THE TEACHERS FORUM, 1938, Vol. X, No. 5. Braille material and pamphlet of directions for giving the tests are available at the American Printing House. Key, class record sheets, and individual profile charts may be obtained from the Educational Test Bureau.

American Council Alpha Spanish Test, Form A, published by the World Book Co. Adapted for use with the blind by Dr. B. F. Holland and used in the Texas School for the Blind. Results and directions for use with the blind presented in THE TEACHERS FORUM, 1935, Vol. VIII, No. 1. Braille material is available at the American Printing House for the Blind. Key and class record sheets may be obtained from the World Book Co.

Sones-Harry High School Achievement Test, Forms A and B, (for secondary schools and college entrance), tests of language and literature, mathematics, natural science and social

studies, published by the World Book Co. Arranged for use with the blind by Georgie Lee Abel, who is preparing a manual of directions. Form A in braille is available at the American Printing House. Key and class record sheets may be obtained from the World Book Co.

New Stanford Achievement Test, Primary Examination, Form V, published by the World Book Co. Braille material and directions for using are available at the American Printing House. Key and class record sheets may be obtained from the World Book Co.

Otis Classification Test, Form A, Part II, published by the World Book Co. Adapted for use with the blind by Miss Ruth Sargent with results at the Pennsylvania Institution for the Instruction of the Blind reported in THE TEACHERS FORUM, 1931, Vol. IV, No. 2. Results in another school were used by Hayes in THE TEACHERS FORUM, 1935, Vol. VII, No. 5, to show teachers "How to Handle Test Results." Holland, in THE TEACHERS FORUM, 1936, Vol. IX, No. 1, reported the results obtained through testing normal, blind and deaf children. Braille material is available at the American Printing House for the Blind. Key and class record sheets may be obtained from the World Book Co.

Sangren Information Tests for Young Children, published by the World Book Co. Adapted for use with the blind by Hayes with directions for administering it in THE TEACHERS FORUM, 1938, Vol. XI, No. 2. No braille material needed.

Kuhlmann-Anderson Intelligence Tests, published by the Educational Test Bureau, Minneapolis, Minn. Adapted for use with the blind by Mrs. Ethel Nestell Fortner, tried out in three schools for the blind, and discussed in THE TEACHERS FORUM, 1939, Vol. XI, No. 3. Braille material and directions for giving and scoring are availale at the American Printing House.

The American Printing House also offers the following tests in braille, but I can find no printed report of their use, nor the names of the testers who arranged them for use with the blind:

Cooperative French Test: Form 1936, Spaulding and Vaillant.

Cooperative Latin Test: Revised series, elementary, form O. Long and Siceloff.

Cooperative Plane Geometry Test: Revised series, form O, Long and Siceloff.

American History Tests (based on West's "American People"), Michaelsohn, First and second semesters, Tests I, II, III, IV, V.

The following section is intended for the assistance of teachers who may wish to adapt other objective tests for use with the blind, either for use in their own classes or as a minor research contribution to the repertory of tests now available.

1. *What standard tests shall we use?*

An enormous number of tests has been devised and published in the last twenty years and a number of centers for test distribution now publish catalogues of tests and offer to sell specimen sets at a modest cost. If several teachers in a school are interested in testing, one of these portfolios makes an excellent school investment which may be kept in the principal's office or left with the school librarian for ready use by all of the teachers. Following is a list of well known test publishers, with some indication of the prices of specimen tests and portfolios:

World Book Co., Yonkers-on-Hudson, N. Y.
Sample sets at 10-25c per test.
Portfolio of Achievement Tests for Elementary Grades, $2.10. Samples of one form of 36 tests in the various subjects, with Manual and Key for each. Complete material for one test is included.
Portfolio of Achievement Tests for High Schools and Colleges, $2.25. Samples of one form of 49 achievement tests in the various subjects. Complete material for one test is included, with Manuals for different subjects and different kinds of tests.

Cooperative Test Service of the American Council of Education, 15 Amsterdam Ave., N. Y. C.
Folio of Cooperative Tests for High School Students, $3.75. Samples of one form of each of 61 achievement tests for secondary school classes
Folio of Cooperative English Tests (7 tests) $.75
Folio of Cooperative Language Tests (18 tests) $1.50
Folio of Cooperative Mathematics Tests (16 tests) $1.40
Folio of Cooperative Science Tests (28 tests) $1.75
Folio of Cooperative Social Studies Tests (16 tests) $1.50
Booklet of 16 pages reproducing the directions and a selection of items showing the various types of questions used in recent forms of Cooperative tests, titled, "Cooperative Achievement Tests," price 25c. This might well be owned by every school where tests are used.

Public School Publishing Co., Bloomington, Illinois

File of elementary school tests (over 90 tests) $8.00

File of high school and college tests (over 70 tests) $5.00

Folios of tests in different subjects, $1.00 to $1.50

Other publishers of tests may be found by consulting the Mental Measurement Yearbooks published by Oscar K. Buros, Rutgers University Press, New Brunswick, N. J. Following are a few of those mentioned:

Bureau of Educational Measurements, Kansas State Teachers College, Emporia, Kansas

Bureau of Educational Research and Service, State Univ. of Iowa, Iowa City, Iowa

Bureau of Publications, Teachers College, Columbia Univ., New York, N. Y.

California Test Bureau, 3636 Beverly Boulevard, Los Angeles, Calif.

Cooperative Bureau of Educational Research, 507 Mutual Bldg., Lansing, Mich.

Division of Educational Reference, Purdue Univ., Lafayette, Ind.

Ohio Scholarship Tests, State Dept. of Education, Columbus, Ohio

Psychological Corporation, 522 Fifth Ave., New York, N. Y.

University of Minnesota Press, Univ. of Minn., Minneapolis, Minn.

2. *What special precautions must we take to make sure that our adaptation is a fair and reliable measure of the educational achievement of blind pupils?*

Considering the mechanical difficulties of tactual reading and writing it is necessary to spend a little extra time orienting blind children to the mechanics of testing. Arrangements of test items which are very easily understood with a glance of the eyes, even if a similar test has not been given before, may lead to confusion and misunderstanding when presented in braille. It is often important to give additional explanations and descriptions of material, followed by forepractice with sample items so that when the test really begins we shall be testing a child's educational achievement and not his quickness in adapting himself to a strange, new arrangement of braille material. Since blind children are given much of their regular instruction orally and are accustomed to the stricter attention and longer memory span involved in this method, one should consider the desirability of giving all of the tests orally, rather than slavishly duplicating the method used with the seeing. Of course there are dangers here: in an early attempt to give as much as possible of the Stanford Achievement series by having the tester read the material, it was discovered that children became unduly fatigued with long-continued braille writing and that some even developed blisters on their fingers from the intemperate use of the stylus. Even a spelling test may introduce hazards if testers come from different parts of the country from their pupils; so we have suggested in the directions for the Dictation Exercise of the New Stanford Achievement Test that, "If several teachers are to cooperate in giving this test, they should go over the words together and decide upon the pronunciations to be used, giving alternative pronunciations when the children do not seem to recognize a word." But the advantages gained by giving tests orally seem to the writer to outweigh the disadvantages in many cases, as indicated by the successful use of the oral method in the following tests in the writer's Self-Surveys Manual, and recent tests like them: Pressey's simple problems in oral arithmetic, Starch's Test of Grammatical Usage and Test 4, on Language Usage, in the New Stanford Achievement Test, the Starch dictionary spelling test and the Ayres spelling test, the Pressey rote memory, logical memory, opposites and analogies tests. The oral method should always be considered when adapting a series of tests for the blind, for besides the reasons already indicated, a change from continuous writing may reduce fatigue, and the oral method may effect a reduction in the total time needed for the tests. The English Usage test of the Unit Scales of Attainment as well as the Grammar, Language and History tests of the Otis-Orleans series might well be given orally, rather than in braille.

Certain types of tests are easily understood when presented to the fingers, others are very

difficult and possibly unfair to the blind. The multiple choice technique seems readily grasped and has a play element which arouses interest. A number of the Stanford Achievement tests and the Unit Scales of Attainment are cast in this form, as are also the Otis Classification Test and many others. Another very good form is the completion test method, as illustrated in the Paragraph Meaning test of the Stanford Achievement series, Trabue's Language Scales, and the Pressey word completion test presented in the Self-Surveys. The matching technique, used successfully with the seeing, causes various special difficulties, and needs considerable modification when used with the blind. This is the favorite method in the Sones-Harry High School Achievement Test, and is used several times in the Otis-Orleans Standard Graduation Examination, both of which contain a wealth of good test material. The ordinary arrangement is to have two parallel columns, one column consisting of a list of words or names and the other of a list of words, names or statements which should be associated with the former in the pupils' minds. For instance, we find in one of the tests on Language and Literature in the Sones-Harry series, a column of twenty names of American and English authors and a parallel column of fifteen titles of books or poems. The seeing pupil is to put after each title the number found in front of the author's name. A seeing pupil would look at the first title, *The Merchant of Venice,* and quickly skim the list of names until the eye was caught by "Shakespeare" which happens to be number 17; or he might glance rapidly up and down if he did not get the answer at once. A blind child might spend a good deal of time reading the column of names before he got his first answer, and would probably read slowly through the list for the names to go with the other titles until he gradually memorized the list. The process would thus be much slower and more tedious for the blind pupil and might be very discouraging if he had to give up on several items after repeated searching. It would seem to the writer a much better plan to transform at least half of the matching tests in the Sones-Harry series into multiple choice tests and, when the matching tests are used, to introduce each one by considerable explanation and forepractice. In this particular test the tester might first read the column of names, with the pupils, so they would get some idea of the list to start with; then the first title might be used as a sample and worked through with the children.

True-false tests can easily be given to the blind, either orally or in braille. The first test in the Sones-Harry series illustrates this kind of test as does also the History Test in the Otis-Orleans series. These might be given orally, the tester reading the sentences to be judged and the pupils writing by means of their braille slates the number of the sentence and a single letter to indicate their decision as to whether the sentence is correct or faulty in expression, the only caution here being that the tester should select two letters for response which have the same number of braille dots, so that the sound of one child writing the answer could not help another. Teachers familiar with braille will at once think of "r" and "w" for right and wrong, "c" and "i" for correct and incorrect, perhaps "h" and "f" for honest and false.

Other interesting methods are illustrated in the Otis Classification Test and the Kuhlmann-Anderson Intelligence Tests. "Which of these five things does not belong with the others—potato, turnip, carrot, stone, onion? Which one of these five words means the opposite of strong—man, weak, small, short, thin? Which one of these five things is the smallest—twig, limb, bud, tree, branch?" These are samples from the Otis Classification Test; following are items from the Kuhlmann-Anderson Tests. "If these items were arranged in order what would be the *middle* one of the list: gallon, gill, bushel, quart, pint? What three things in this list *belong* together—dirt, iron, force, silver, wool, wire?"

Various special methods for saving time or reducing the number of errors will occur to ingenious test makers. In the Kuhlmann-Anderson adaptation, for instance, the children are frequently asked to write the first letter of the word chosen as an answer, thus saving the time and energy needed to write the whole word; in a test requiring them to rearrange a jumble of words to make a sentence, they are asked to record the first and last word, and not the whole sentence. In some reading tests it has been found convenient to have the children indicate how far they have read by a certain time by rubbing down the braille dots, but most testers seem to find it more satisfactory to ask the children to keep their finger on the last word until the tester can go about and mark the last word with a pencil. The same rubbing down method has been used in multiple choice tests, like tests 2, 5, 6, 7 and 8 of the Stanford Achievement series, on the ground that the children can hardly be expected to use a pencil as the seeing do. But if a short stub of a pencil is given to each child, his practice with a stylus seems to transfer to the use of the pencil, and little difficulty is experienced in its use. Also the pencil is less likely to damage the braille dots, so the test cannot be used for review work later.

3. *How shall we set the time limits of our tests so that they will test "power" rather than speed?*

Obviously, if we are to compare the work of the blind with that of the seeing we must make reasonable provision for their slow rate of reading and writing braille. Preliminary experiments by the writer at the Pennsylvania Institution for the Instruction of the Blind, the results of which were published in 1918 as No. 1 of the Overbrook Monograph series, convinced him that blind children read only about one-third as fast and write with a stylus only about one-half as fast as seeing children having the same number of years' experience in school work. At first he attempted to set grade standards, but when he discovered that in some grades the fastest readers had a rate from three to five times that of the slowest, he sought another basis for comparison, with the following justification: "Sighted children begin school at the bottom, at about the same age, and progress with fair uniformity upward from year to year. In the large cities where the reading standards have been established, the backward are likely to be segregated in special classes, so that children in the grades are a relatively homogeneous group as to age, years of schooling, mental ability, etc. In a school for the blind, however, many grades are exceedingly heterogeneous. A child may begin school work with the substitution of fingers for eyes at six or at twenty. He may be quite undeveloped for his age through lack of opportunity or from native mental inferiority. Fig. 5 shows that at Overbrook the children average from four to five years older than children in the same grades in the schools for the sighted. Again, there are no special classes for blind pupils of low mentality, and many are retained in schools for the blind because their discharge would mean the withdrawal of all educational advantages. And, of course, the handicap of blindness in general, and the difficulty of touch reading, prevent pupils of fair ability from attaining their proper place in school with the speed often observed with sighted pupils. For these various reasons it has seemed best not to rest content with a comparison of blind and sighted readers grade by grade, but to recast the figures in ways that would put the blind upon a more equitable basis." The basis decided upon was the number of years pupils had read braille, and tentative standards were set at about one-half the seeing rate in the early years and one-third the seeing rate in the later years, basing these standards on the actual attainments of the children at Overbrook. In planning tests for the Self-Surveys Manual of 1921, which were generally begun in the fourth grade as the lowest grade in which one could successfully give tests in braille, about three times the time allowed the seeing was given to the

blind. But, aside from the rate of straight-ahead reading we must consider the special difficulties encountered when a blind child must read from a braille pamphlet and then turn to a braille slate to record his answers to questions raised, with a considerable chance of losing time through mislaying or dropping his stylus or losing his place either in the braille pamphlet or on his slate. In many arithmetic tests, the Taylor arithmetic slate also must be used and the likelihood of losing time becomes still greater. Yet, in general, it seemed possible, when sufficient time was spent in orientation to the mechanics of the test and forepractice in its operation, for the blind to adjust themselves to the new testing techniques, and by gaining momentum with repetition, to finish the ordinary 10-20 minute test in about three times the period allowed for the seeing. This was the allowance planned in the tests of the Self-Surveys Manual, and three times the seeing time has now become customary for a preliminary trial of other tests. Dr. Maxfield attempted a slight shortening of the time in her manual on the early form of the Stanford Achievement Tests and her method was criticized by Dr. Floyd F. Campbell in a careful statistical study published in 1932 by the American Foundation for the Blind, entitled "A Comparison of Blind and Seeing Children in Certain Educational Abilities." He correlated the results obtained by allowing blind children 20, 40, 50, 60 and 70 minutes on Forms A and B of Test I; and 10, 20, 25, 30, 35 and 40 minutes on Forms A and B of Tests II and III; the shortest times being the times allowed the seeing and the longest times being the periods needed by the slowest blind children and so considered the same as unlimited time on the tests. He found a regular rise in the correlations with the increase in time up to 60 minutes for Test I and to 35 minutes for Tests II and III, with no advantage from a longer time allowance, i. e. he found that with 35 and 60 minutes respectively the blind did as well as though they had had unlimited time, so he set these intervals as the optimal time allowances for the blind in these tests and added further evidence to support our earlier recommendation of three times the seeing limits when testing the blind.

In the writer's directions for giving the revised forms of the Standard Achievement Tests, published in THE TEACHERS FORUM, 1937, Vol. IX, No. 5, a provision was made for determining the most advantageous time limits by experiment. Testers were requested to stop the children at the end of 25 minutes, (in each of the tests for which seeing children are allowed 10 minutes), and to go about the room and mark with a red pencil the last item worked on by the child. Then the test would be resumed for another 10 minutes and the final item indicated by a black pencil mark, giving the extent of the child's work in 25 and in 35 minutes. Two schools have kindly reported the scores obtained at these two intervals, and the results of statistical treatment of the data are presented in the following tables. When the data were first turned in an interesting and surprising fact emerged: many pupils obtained a smaller score when allowed 35 minutes to work than they had obtained after 25 minutes, especially in the lower grades. The reason for this paradox appears to lie partly in the method of scoring a number of the tests, and partly in the fact that the test items tend to increase in difficulty from the beginning to the end of each subject division. In Test 4, Language Usage, for instance, *two* alternative answers are offered from which the pupil is to choose the one he prefers, and in order to limit success through mere guessing, the score is obtained by subtracting the number wrong from the number right. This method of scoring is based on the assumption that when a pupil makes a mistake he does not know the answer and is guessing, and that he may well be guessing on an equal number of items which he happens to mark right. In tests 5, 6, 7, and 8, *three* alternatives are offered, and the guessing element is nullified by subtracting one-half the number wrong

TABLE I. *Pearson's product moment correlations of scores obtained in the different Stanford Achievement Tests with 25 and 35 minute intervals for work.*

Tests	School B Tested in Feb. '38 No.	No. of pupils tested	r	P.E.	School C Tested in Feb. '38 No. of pupils tested	r	P.E.
Word Meaning	2	75	.99	.0016	73	.92	.012
Language Usage	4	75	.96	.0054	91	.89	.016
Literature	5	74	.97	.0047	93	.92	.011
History & Civics	6	74	.97	.0047	87	.92	.012
Geography	7	75	.98	.0031	92	.98	.0028
Physiology & Hygiene	8	75	.98	.0024	88	.99	.001
Arith. Reasoning	9	75	.98	.0034	56	.98	.0026
Arith. Computation	10	75	.99	.0009	No records		

from the number right. Now in all the tests the longer time interval makes it possible for pupils to attempt the more difficult items farther along in the tests, and in many cases there were more failures than successes. In tests 1, 2, 3, 9, and 10, which are scored according to the number right, a mistake would not reduce the score any more than an omission would, and in two of these, test 2, on word meaning and test 9, on arithmetical problems, an appreciable increase in average score was shown in many school grades; but in tests 4 through 8, a mistake is from 50% to 100% worse than an omission, and an actual reduction in score was often found after the longer period of work. This in itself would seem to be a sufficient reason for favoring the shorter time limits in these tests, for obviously a considerable number of pupils had shown their maximal achievement in 25 minutes. But in order to give statistically valid reasons for settling the question, the following calculations were made.

The very high correlations shown in Table I in every test and in both schools indicate that so far as measuring the achievement of the pupils is concerned, it makes practically no difference whether the 25 or 35 minute interval is used; the same pupils come to the top with either time allowance, and the same pupils are found at the bottom. A similar conclusion may be drawn from Table II, where correlations by *total* scores for the whole series of tests are presented.

TABLE II. *Pearson's product moment correlations of total scores obtained from the ten subject-divisions of the Stanford Achievement Tests in two schools tested in February, 1938, with 25 and 35 minute intervals for work.*

Number of pupils tested	Correlation	P.E.
School B 74	.93	.0106
School C 94	.97	.004

In School A, a 30 minute time interval was allowed in the tests given in October, 1937, so correlations were made with the results in 1935 and 1936 when 35 minutes were allowed. To complete the table the results in 1935 and 1936 were also correlated with each other. All three of these correlations are very high, thus adding further evidence to our conclusion that it does not make much difference which time limit is set and that we may as well save the extra 10 minutes of

TABLE III. *Pearson's product moment correlations of total scores obtained from the ten subject-divisions of the Stanford Achievement Tests in School A tested at different dates and with varied time allowances.*

Date and time allowance	Number of pupils	r	P.E.
Nov. 1935 (35 min.) and Dec. 1936 (35 min.)	69	.93	.011
Nov. 1935 (35 min.) and Oct. 1937 (30 min.)	40	.87	.027
Dec. 1936 (35 min.) and Oct. 1937 (30 min.)	45	.96	.007

teacher time and pupil fatigue in the testing program.

A further statistical procedure commonly used in evaluating the results of tests is the calculation of the critical ratio, the quotient of the difference between two averages divided by the standard deviation of this difference. When this critical ratio amounts to 3 or over, the averages are regarded as showing statistically significant differences; as the ratio decreases, the differences between the averages become less and less reliable. The following two tables give the data leading to the critical ratios for each test in two schools and for certain comparisons in terms of total scores.

It will be observed that none of the critical ratios in Tables IV and V approximate 3, and that many of them are very low, two even becoming negative in two tests where the mean score at 35 minutes was actually less than the mean score at 25 minutes. These low critical ratios indicate that in none of these tests is there a significant difference in the attainment at 35 minutes, and therefore no reason for continuing to use the longer time interval. Our statistics then, both the correlations and the critical ratios, support the common sense conclusion based on the observation that many children got lower scores when allowed a longer time to work.

In contrast to the low critical ratios ob-

TABLE IV. *Critical ratios for tests in the Stanford Achievement Tests, for two schools reporting results at* 25 *and* 35 *minutes.*

School B tested in Feb. 1938								
	Means		S. D. of distrib.		S. D. of mean		Diff. of	Critical
Test	25 min.	35 min.	25 min.	35 min.	25 min.	35 min.	means	ratio
2	95.36	90.58	20.94	19.86	2.42	2.29	5.22	1.57
4	89.36	89.92	24.16	26.08	2.79	3.01	.56	.14
5	90.72	91.63	17.64	18.55	2.05	2.15	.91	.31
6	85.7	88.8	24.6	25.3	2.86	2.94	3.10	.76
7	97.69	100.09	25.06	23.94	2.89	2.76	2.40	.60
8	84.3	85.85	18.35	17.75	2.12	2.05	1.55	.52
9	80.70	85.25	22.33	23.80	2.58	2.75	4.55	1.20
10	77.74	77.68	21.06	20.88	2.43	2.41	.06	.02
School C tested in Feb. 1938								
	Means		S. D. of distrib.		S. D. of mean		Diff. of	Critical
Test	25 min.	35 min.	25 min.	35 min.	25 min.	35 min.	means	ratio
2	80.5	86.6	16.64	17.36	1.94	2.03	6.10	2.17
4	82.37	76.70	25.62	26.81	2.68	2.81	5.67	1.46
5	76.98	81.33	18.83	20.51	1.95	2.13	4.35	1.50
6	81.46	85.24	18.76	21.28	2.01	2.28	3.78	1.24
7	87.8	89.3	19.8	20.4	2.06	2.13	1.50	.51
8	77.96	79.70	16.2	16.2	1.73	1.73	1.74	.71
9	80.12	83.54	18.72	21.24	2.50	2.84	3.42	.90

TABLE V. *Critical ratios for total and average scores in the Stanford Achievement Tests, for two schools reporting results at* 25 *and* 35 *minutes.*

	Means		S. D. of distrib.		S. D. of mean		Diff. of	Critical
	25 min.	35 min.	25 min.	35 min.	25 min.	35 min.	means	ratio
School B Total	864.85	879.75	203.66	204.88	23.67	23.81	14.90	.44
School C Average	79.04	80.06	17.28	16.80	1.78	1.73	1.02	.41

TABLE VI. *Critical ratios for total scores in the Stanford Achievement Tests obtained by retesting pupils in School A for 3 years.*

Number of pupils	Means		S. D. of distr.		S. D. of mean		Diff. in means	Crit. ratio
	1935	*1936*	*1935*	*1936*	*1935*	*1936*		
69	683.6	808.4	186	204	24.55	22.38	124.8	3.75
	1936	*1937*	*1936*	*1937*	*1936*	*1937*		
45	780	887.6	180	156	26.82	23.25	107.6	3.03
	1935	*1937*	*1935*	*1937*	*1935*	*1937*		
40	663	899	148	194.4	30.76	23.42	236	6.10

tained above we are presenting in Table VI some similar data resulting from retesting in School A. In this table we find critical ratios large enough to indicate significant differences; in this case they point to the progress pupils may make during a time interval on tests of this sort. This table shows that the average total score of the 69 pupils tested in 1935 and again in 1936 rose from 683.6 to 808.4, obviously a good gain in achievement, and certified as significant by a critical ratio of 3.75. Almost as good a gain was made by the 45 pupils tested in 1936 and 1937, while a much larger gain was made by the 40 pupils tested in 1935 and 1937, with a critical ratio of 6.10.

SUMMARY. This paper is an attempt to protect teachers in schools for the blind from falling into the more common errors made in mental testing. After a discussion of the basic principles and the most acceptable techniques of testing in general, a survey has been made of the best group tests which have been adapted for use with the blind, most of which are available on school quotas at the American Printing House for the Blind. The second section of the paper is intended to assist teachers who wish to adapt additional tests and use them with blind pupils. "What standard tests shall we use?" is answered by a list of test publishers and some of their offerings. "What special precautions shall we take?" leads to a detailed treatment of the technique of testing the blind. The final part of the paper is an extended discussion of the timing of tests used with the blind, presenting abundant experimental data which is statistically treated. This leads to the conclusion that in group tests blind children should be allowed approximately three times as long as the seeing to complete a standardized test, with the possibility of some shortening of this allowance after the children have become accustomed to the special technique involved.

Harold Wright

Harold William Wright, Assistant Principal of the New York Institute for the Education of the Blind, died suddenly on May tenth, following a heart attack. Mr. Wright was born January 31, 1903 and was graduated from North Central College, Naperville, Illinois, in 1926. He did graduate work at Northern Illinois State Teachers' College, DeKalb, and at Teachers College, Columbia University. For some time he served as a teacher in the Woodstock School in India, and upon his return to this country accepted a position at the Institute in April, 1930, and was appointed assistant principal during the following year.

In 1938, Mr. Wright was elected as a member of the Executive Committee of the American Association of Instructors of the Blind, a recognition of his ability and leadership in the field of the education of the blind. His sympathetic knowledge of the blind child and the generous giving of his time and energies to the blind without thought of himself will remain the outstanding contribution of his life to this school and to the education of blind children.

Girl Scouting in Institutions for the Blind

Eber L. Palmer

Girl Scouting furnishes an excellent opportunity for those who are interested in the development of the potentialities of visually handicapped girls to bring about desirable activities and to build character. The revised Girl Scout program as it relates to physically handicapped girls offers a challenge to the administration of any school for the blind. Careful study of the program reveals the fact that it is sufficiently flexible to allow the adaptation of any part to the special needs of girls who have impaired vision or are without sight.

The efficacy of Girl Scout activities with visually handicapped girls will be determined, in part, by the ability of the leader to devise a program which deviates as little as possible from that which is carried out by a group of physically normal girls. Obviously, certain activities of seeing Scouts, dependent upon sight, are impossible or dangerous for blind girls. However, the national Girl Scout program is now sufficiently flexible to allow substitutions.

Adequate and effective substitutions can be made only when the leader or the assistant has had training and experience in the solution of problems involving blind girls. It is the belief of the writer that in the case of an institutional troop, someone who is without sight should be associated with the troop, preferably as assistant leader. The contact of a person who has encountered many of the problems confronting blind Girl Scouts will help to break down any artificial barrier that might arise between a leader who sees and girls who are without sight. However, if either the leader or the assistant leader is without sight, she should have had special training in one of the leadership training schools conducted by Girl Scouts, Inc.

Wherever possible girls without sight should be given opportunities to have social contacts with those who see. Scouting, if properly organized, is one of the most potent means of making such contacts possible. A Scout organization in a school for the blind should keep in close touch with community, county, and national Scout programs. It should take an active part in city and county Scout activities and projects. Joint meetings with seeing troops of the community should be a part of the regular program.

When a Girl Scout troop is organized in a school for the blind, the leaders must envision a program of Scouting for the individuals of the troop that is broader than the activities of the troop itself. The student in a school for the blind is in her own home environment, away from the school, for about two or three months each year. What is happening to Girl Scout activities for each blind student during that period? To make the program effective for the full year, it is necessary for the leaders of the institutional troop to try to have each girl assimilated into a troop for seeing girls in her own home community during the summer months. Every effort should be made to enable each blind girl to spend some part of the vacation at one of the summer Girl Scout camps with seeing girls. The initiative in regard to the summer Scouting activities of blind girls must be taken by the leader of the institutional troop and the school authorities in cooperation with Girl Scout National Headquarters.

With an alert leadership the troop in an institutional school can find unlimited opportunities to make Girl Scouting of real service to blind girls. In view of the revised program of activities, they can participate on an equal footing with seeing girls. They need not feel that their visual handicap sets them apart.

Material which gives detailed information concerning Girl Scouting for physically handicapped girls, in relation to the general program, may be obtained from the Na-

(*Continued on page* 98)

Our Bookshelf

KATHRYN E. MAXFIELD, PH.D.

DR. NORMAN L. MUNN, in his excellent textbook, *Psychological Development,* (Houghton, Mifflin, 1938) refers to experimental work which has been done with the blind, in order to illustrate the characteristics of sensory and emotional development and of spatially coordinated behavior. After saying that an infant responds to tactual cues from the feet, to kinesthetic cues associated with the movement of the muscles, tendons and joints, and to directed visual cues at various times, he comments as follows: "Walking thus involves inter-sensory motor coordination to a high degree. The sensory control of walking is a fruitful field for research. It would be especially interesting to determine, for example, whether blind infants, deprived of stimulation obtained from seeing the movements of others and of directive cues of various kinds, are retarded in the time of walking, or suffer in any other aspect of locomotion as a result of visual deprivation." (p. 323.) Those of us who have worked much with blind babies would probably feel that we could give him empirical evidence in the affirmative.

Dr. Paul A. Brown, in "Responses of Blind and Seeing Adolescents to an Introversion-Extroversion Questionnaire" (*Journal of Psychology,* 1938, Vol. VI, pp. 137-147), reported a strictly quantitative investigation as to whether the blind and seeing manifested significant differences in their tendencies toward introversion or extroversion. He used for this purpose the Neymann-Kohlstedt Diagnostic Test for Introversion-Extroversion which, although devised some ten years ago and not widely used, seems nevertheless to be well adapted for the blind because no important changes in procedure or text are required.

Some interesting results were obtained which suggest the value of further work along the same lines. For instance, whereas the reports of the blind girls were somewhat more *introvertive* than were those of the seeing girls, the reports of the blind boys were somewhat more *extrovertive* than were those of the seeing boys. The result for the girls is what we might expect but why should the physically handicapped boys, as a group, give more extrovertive responses than seeing boys who are supposed to have greater opportunities for freedom of self-expression? Brown's supposition is that there may be a tendency on the part of visually handicapped boys to overcompensate both for their handicap and for their "institutionalization."

There is one fundamental criticism of this otherwise stimulating and worthwhile study. Brown says, "Our blind subjects possessed visual deficiency sufficient to warrant attendance at a school for the blind." (p. 137.) Although the schools from which his data came have good eye standards for admission, nevertheless, this definition of blindness is so broad as to seriously affect the validity of the results. When one knows how much vision many of the students in these schools possess and when one realizes what a small amount of sight is necessary to make an educationally blind boy or girl socially independent, one cannot help but feel that an important step in procedure has been overlooked. Certainly, any future work should take into consideration the degree of blindness.

"The Blind Have 'Optical Illusions' ", by Professor Charles H. Bean, is unusual and provocative of thought. (*Journal of Experimental Psychology,* 1938, Vol. XXII, No. 3, pp. 283-289). This is an investigation of the tactual-kinesthetic reactions of blind subjects and of seeing subjects who were blindfolded, to tactually presented "illusion figures" which have been used as tests of visual illusions in laboratory psychology for a quarter of a century or more. A number of wise precautions

were taken with regard to procedure. After the material had been presented tactually to both the blind and the seeing the visual originals were presented to the seeing subjects.

Although there was no reason to suppose that the material thus presented would give the same illusions to the tactual and kinesthetic senses as they were known to give to the eye, nevertheless this proved to be the case. Bean concludes, "Here we have evidence enough that observation of the behavior of the blind while perceiving tactokinaesthetically under properly controlled conditions is a safe objective procedure in the analysis of human perceiving." (p. 287.) We have a study here which indicates some common basis of experience between the blind and the seeing, even though this commonalty lies in the field of illusions. Some of these illusions are valuable from the point of view of efficient habit formation.

A similar commonalty of experience between the blind and the seeing is revealed in a valuable book just off the press which will be reviewed later in this magazine. (*The Nature of Creative Activity,* Viktor Löwenfeld. Harcourt, Brace, 1939, 272 pp.)

A teacher of the blind, Elizabeth Shields Hall, has approached the study of size and space concepts of the visually handicapped in a constructive manner. (*A Comparison of the Size and Space Concepts of Blind and Sighted School Children*. University of Oregon, May, 1938. Unpublished master's thesis.) The purposes of the study were (p. 17): (1) To construct an objective test which would measure the knowledge of sizes of objects within a blind child's experience in terms of his own body, and in terms of other objects he knows, and the child's ability to express this knowledge; (2) To administer this test to blind children in certain grades, five through eight; (3) to administer it to a comparable group of public school children; (4) to judge the development of this ability in the blind through the results obtained; and (5) to infer from this and other available materials the significant relationship of such knowledge to what is known about mental organization. Hall devised an ingenious series of tests which could well be given to additional groups. She suggests that the tests should be improved in a number of respects on the basis of experience. Because of the constructive suggestions to be found in the investigations by Brown, Bean, and Hall, it is to be hoped that their work will be carried further.

Two publications from the Office of Education should be mentioned. The first is "Selected References on Education of Exceptional Children, V. Visually Handicapped Children," by Elise H. Martens. (Supplement, Federal Office of Education, Pamphlet No. 71, of "*An Annotated Bibliography on the Education and Psychology of Exceptional Children,*" (1937), released January, 1939 in mimeographed form.) The second is by Emery M. Foster and Elise H. Martens on "*Statistics of Special Schools and Classes for Exceptional Children*. (U. S. Government Printing Office, 1938, Bulletin, 1937, No. 2.) This pamphlet is full of valuable information for administrators and others interested in promoting legislation in behalf of the visually handicapped.

In his recently translated textbook, *General Psychology from the Personalistic Standpoint,* (Macmillan, 1938), William Stern draws upon his past studies of Helen Keller and on the references to the blind in *Der Aufbau der Tastwelt,* by D. Katz (1925), to emphasize his point with regard to the functioning of the senses. Stern comments penetratingly on the possibilities of a rich mental life for the blind through the vicarious use of the other sense modalities, although he recognizes as a fact that no one sense can be entirely adequate as a substitute for another.

In a field of investigation bordering on the psychological, two studies have recently appeared: "Extra-Sensory Perception Among the Blind," Margaret M. Price and Margaret H. Pegram, *Journal of Parapsychology,* 1937, Vol. 1, No. 2, pp. 143-155; and "A Comparison of Blind and Seeing Subjects in ESP

(*Continued on page* 98)

Dr. Allen Says: Fair Play for Hard-of-Seeing Children

Visitors to institutions for blind youth are commonly surprised to find there pupils who have some sight. We explain that a child is educationally blind if he cannot—or should not—use his eyes for ordinary reading; and we insist that our semi-sighted pupils benefit both physically and culturally from what such a school provides.

Yes; but we know from long experience that most such pupils, when put into classes with the blind, do not do their best, get lazy, and lose their morale; and that, while they lead on the playground, too many of them finally leave school no longer semi-sighted but semi-blind, a psychological difference of tremendous import.

And so, when, in 1909, London showed a way to avoid all this, our Massachusetts Commission for the Blind, having for two years vainly importuned Boston's School Board to open a trial class for semi-sighted children, approached Perkins to open one. But Perkins declined, foreseeing that its doing so would release the city from its duty and might fasten such classes on the institution permanently. Later, a new Superintendent of Schools, Dr. Dyer, from Cincinnati, a friend of Dr. Van Cleve, being personally visited, authorized the starting of such a class in 1913. The same year Cleveland opened one and other cities rapidly followed, until today the United States has more pupils in public school sight-saving classes than blind pupils in all its special schools.

It has been my custom to visit such classes or schools at home and abroad. The European approved plan is to teach them apart and generally without books, the London ophthalmologists insisting that writing with crayon be substituted, either on the blackboard or on wide-ruled paper, and that emphasis be put on learning through making and doing in interesting variety—a clever program when it is realized that these children should not become reading addicts like most of us.

As a teacher I have particularly enjoyed the visits which showed spirited adventure into, for example, project making; into history and geography clarified through magic lantern projection; in grace attained through folk dancing; and in music culture through group violin playing. Naturally the teachers deplore the loss of silent reading, but try to make up for this by reading aloud to the children; and they have assured me that all in all their pupils lose little real schooling, one master declaring that his students somehow gained in serviceable ways, and that they averaged above the normal seeing of corresponding grades in tests set for all.

But these foreign groups have not multiplied. Doubtless the remarkable increase in the United States is due mainly to our having clear type books, thus enabling the teachers to follow the prevailing American "reading method." These books have also enabled some of our institutions for the blind to conduct sight-saving classes for the low-vision children unprovided for elsewhere. In so doing, institutions obviously assume the responsibility of preventing individuals in them from acquiring irresponsible views of life from their environment and eventually applying to agencies for the blind for employment or relief. A young part-seeing applicant for a position would be far less likely to be considered if educated in a school for the blind than if he had had a public school training.

Is it then necessary to bring these semi-sighted children to an institution for the blind even if they cannot attend a sight-saving class near home? No! Certain states keep some such children in their regular home schools. Little Connecticut does, having for the past four years sent around a specially trained mothers' counsellor, who is a graduate nurse,

to the twenty-four children now so placed. She follows them up in all ways, with results generally satisfactory to the State's Board of Education of the Blind, which has a lending library of clear type books.

Little Massachusetts, through its Division of the Blind, has two field supervisors—social service eye workers—who cover the forty-one classes, and give occasional talks and broadcasts on the care of children's eyes. Armed with the oculist's findings, one of them visits the parents and teacher of each new case reported, explaining what to avoid, and what to do and how to do it. They usually have some sixty charges attending regular schools scattered here and there, most doing reasonably well, too, and, where the classes are small, as in country districts, often doing extremely well. The mothers are said to be grateful and the teachers generally willing and cooperative.

Bigger New York State does much the same through its Department of Education at Albany. When a child's medical report allows the reading of large print the supervisor writes the child's teacher a personal letter describing ways and means of handling every subject likely to involve eye strain; then she either lends clear type books from the state's traveling library or provides reading service through the State and County Aid. In addition she visits whenever possible and helps the teacher to understand individual conditions and to follow the proper procedure. Mrs. Hathaway, Associate Director of our National Society for the Prevention of Blindness, writes: "This has been found to be a very satisfactory method in the great majority of cases." The Society even helps to prepare medical eye workers for this field of service.

Pennsylvania, too, through the State Association and the State Council for the Blind, also through the Philadelphia Committee for Prevention of Blindness, is laboring enthusiastically for the same end. Indeed, the Council's specially trained field workers, when prevented by the depression from forming new classes, instead of giving up activities, initiated its Special Equipment Plan, as follows: Putting the child under the care of the best ophthalmologist available, and encouraging the mother, they show the local principal and teachers how to surround this pupil at school with hygienic eye conditions—best location and position of slanting-top desk for maximum or suitable daylight and for artificial lighting, proper window shades, no glare, etc., then clear type books, sometimes lighted lenses magnifying common print to 24 point, slanting bookracks, dull finish paper, heavy soft lead pencils, etc., and where possible a bulletin typewriter (elsewhere getting high schools offering commercial courses to type the lesson assignments). One of my official informants writes that making intelligent provision for one child with poor eyesight usually directs attention to what should be done for all school children. "In fact, as a result of one demonstration, every room in the York elementary schools was made safe and comfortable for the seeing." And she adds: "Little by little we have begun to feel that our program is broader than that offered by the sight-saving classes, and that eventually all children will benefit by it."

Another writes: "The program has the approval of the Special Education Department of Pennsylvania, and of the local group of ophthalmologists. The fact that it is a constantly growing thing would seem to be an indication of its value."

(*Continued from page 94*)

tional Headquarters of Girl Scouts, Inc. A careful study of the material, combined with trained leadership, a well-planned local program, and hard work can make the institutional Girl Scout troop successful.

(*Continued from page 96*)

Tests," Margaret M. Price, *Journal of Parapsychology,* 1938, Vol. 2, No. 4, pp. 273-286. The field of extra-sensory perception is one in which this reviewer cannot seem to feel at home and consequently, although she feels a strong urge to criticize these two articles, she is refraining from doing so.

A Review

BERTHOLD LÖWENFELD

Schulische, Berufliche und Nachgehende Fürsorge für Blinde und Sehschwache, (Educational, Vocational and Follow-up Work for the Blind and Partially-seeing), by Dr. Carl Strehl, Georg Thieme, Leipzig, 1939, 79 pp.

THERE is no doubt that the change of government in 1933 in Germany has strongly influenced all phases of work for the blind. Apparently, the main purpose of this publication is to give a preliminary summary of these influences, and to show the changes that have occurred since the publication of the exhaustive "Handbuch der Blindenwohlfahrtspflege" in 1927. The pamphlet is intended to serve as a source of information for all who come in contact with problems of the blind, and is written with the same ability and accuracy that characterize the previous works of Dr. Strehl.

The position of welfare work for the blind, within the frame of general welfare work, is defined as follows: "The blind, because of their defect, are in many respects inferior to persons with normal senses. From the point of view, therefore, of our new philosophy, as members of the nation, the stronger have to assist the weaker."

There are two definitions of blindness, (1) the scientific or total, (2) the practical or social. The former implies the inability to distinguish darkness and light; while the latter not only includes totally blind persons but "those whose central visual acuity is from 1/50 to 1/25 of the normal, although 'sick of that kind' are usually able to find their way on the street without help." Practical blindness may also be applied to those with central visual acuity above 1/25 of the normal, under specific conditions such as restricted field of vision, nystagmus, night blindness, etc.

In the chapter on Statistics which is based on the last census of 1925-6 for Germany, including corresponding figures from the Saar, Austria, and Sudetenland, we find that of the 80 million inhabitants of greater Germany, living in an area of 342,000 square miles, 43,319 are blind and 3,400 of these are war-blind. There is, however, no indication given as to the method applied in arriving at these figures, which makes them somewhat questionable. Exact data in regard to the causes of blindness are also missing. Dr. Strehl estimates that about 13% of the blind are born blind.

A distinction between congenital and hereditary blindness is of the utmost importance when considering the German Sterilization Laws. "It stands to reason that any person afflicted with hereditary blindness who is an intelligent and responsible citizen will make this sacrifice of his own volition in the interest of the national welfare." With respect to those who do not comply voluntarily the eugenic laws are enforced.

There are strict regulations concerning consanguineous marriages. It is hoped that these laws will contribute to the elimination of hereditary blindness, although blindness caused by accident, sickness or old age will always occur. Since the latter constitutes the great majority of cases, work for the blind will always be one of the foremost tasks of the state and national community.

In Germany, the education of the blind is compulsory, beginning at six years of age and extending to fourteen years. If, within this time, the education of the blind child is not completed, schooling may be extended for another three years. If necessary, the placement of a blind child in an institution may be officially ordered.

Institutions for the blind have a three-fold objective—education, teaching, and vocational training. Governmental and private schools are found all over Germany, but there are

no classes for the blind in the public school system. Vocational training(also compulsory) is acquired either in vocational schools or schools of higher education. The Blindenstudienanstalt, Marburg-Lahn, of which Dr. Strehl is the director, functions as a university for the blind and has all the facilities for higher education. There is a special two-year course for teachers of the blind connected with the State Institution for the Blind in Berlin. This course has to be taken after the completion of the required studies for public school teachers, and ends with a final examination.

One chapter of this book deals with vocations for the blind, but introduces no innovations in this field. Another deals with the laws and regulations governing the welfare and care of the blind. Almost all of these laws were put into effect before 1931 by the German Republic and adopted by the new regime. Later decrees deal almost exclusively with special taxation and exemptions for the blind.

The status of the self-help and welfare organizations for the blind remains practically unchanged, although they have been subordinated to the general national welfare organization. The erstwhile claims for compensating pensions for the blind have not been realized.

The adaptation of the *Blindenwesen* in Germany to the ideas of the new regime seems to have made considerable progress. Nevertheless, there are slight indications that the official attitude is not always shared by those brought up under the "old system." For instance, it is carefully pointed out that there is no reason for considering the blind as "asocial" or "sick;" but the legal definition of blindness refers to the blind as "sick of that kind."

Needless to say, the terminology of National Socialism and Racism and the underlying ideas are incorporated in this pamphlet.

The ten-year Index of THE TEACHERS FORUM may be obtained upon request.

The Teachers Forum

for

Instructors of Blind Children

Address all communications to

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AMERICAN FOUNDATION FOR THE BLIND

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The Editor will not be responsible for opinions expressed in signed articles

MAY, 1939

It is hoped that all teachers of the blind will read, preserve and use the first article in this issue of the FORUM. It discusses, in brief scope, the principles underlying mental testing in general and the accepted procedures involved, calls attention to the best group achievement tests which have been adapted for use in schools for the blind, and gives suggestions for the guidance of those who wish to adapt additional tests. Attention is directed also to some of the principal sources of test material, to special precautions which should be observed in connection with test adaptation and to the proper timing of tests used with the blind. The article is valuable, practical and opportune and merits considerable attention.

Our Contributors

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Mental Set

Samuel P. Hayes, Ph.D.

To make experience articulate, to enable us to put our thoughts into words, is one of the primary aims of education. Some people always remain relatively inarticulate: they cannot express themselves with clarity and discrimination in speech or writing. Intellectual attainment is clearly indicated if not exactly measured by vocabulary tests which show how many words we can recognize or use in our own or some other language.

Psychology has made great contributions to the problem of expressing experience in words—of recording verbally our behavior. It has given us hosts of new words and phrases for the things we do and feel from day to day. These technical terms are simply convenient names for experiences which are common to us all, but which the scientists formulate for us. Every child has pressed his nose against a window pane and has been surprised to find that after he draws away from the window, his nose still feels cold. Children find it amusing to press a coin on the forehead, for they know that when the coin is carefully removed, it will feel as though it were still there. These experiences the psychologist calls "after-images." Everybody has had the interesting experience of visiting a new place, and feeling as though he had been there before. This the psychologist calls "paramnesia," or false recognition. "Illusion" is another psychological term for many mistakes in perceiving the sights and sounds about us.

"Mental set" is a psychological phrase which covers a great variety of every-day experiences. Its meaning will be clearer if we first describe some physical analogies. Machines are often adjustable. We may "set" them for one or another operation, or we may turn them so that they will function in some one direction. A very simple illustration is pointing a sled down a hill. When we push the sled, it will go in the direction in which it is pointed. We may set a typewriter for single or double spacing; we may set it to print or to cut a stencil. The monkey wrench is a great mechanical invention, because one can set the wrench to fit many different sizes of nuts: without such a tool one would have to use a different wrench for each nut. We have bread-cutting machines which may be set to cut slices of different thicknesses, and machines that slice ham as thin as paper. Factories are full of machines which may be set for a particular job, and the way the machine is set makes all the difference in the result. Human machines set for one operation may become useless for any other. If I am ready for a long jump, my muscles are adjusted for that but not in a condition to begin another kind of activity, such as dancing. If I have clenched my fists to strike, I cannot play the piano. When I am ready to start running at the sound of a pistol shot, I am in no condition to kick high or to use a vaulting pole. Setting the machine for one operation, allows us to do that thing, with ease and accuracy, and at the same time prevents us from using the machine in other ways. Contrary actions are made difficult or impossible.

The study of animal life gives us many examples of organized set. The "delayed reaction experiment" is a case in point. Suppose I arrange three boxes with food in them, unlocking only the one with a light over the door. With a few trials, I can train animals always to go towards the box that is lighted, for they have discovered that they cannot get into any box that is not lighted. Now suppose I hold a trained animal, turn the light on and then off, and then release the animal. Will he go to the box which was lighted for a moment? We find a great difference in ani-

mals, and the length of the delay which will *not* interfere with their success has been measured. Rats can be restrained for five seconds only: if the delay is longer than that the memory of the proper box seems to fade. Cats may be delayed three times as long as rats, dogs from one to three minutes, and children from twenty seconds at fifteen months of age to twenty minutes at five years of age. The set is more obviously mental with some of these subjects than with others. Rats and cats must keep their heads and bodies turned towards the light, or, when released, they will not go in the right direction. They remind us of the sled pointed one way. Dogs and children seem to be able to overcome the difficulty of bodily adjustment and select the right box even when allowed to move about during the delay.

What the psychologist calls "preparatory reactions" seem to determine somewhat similar types of mental set among animals. Suppose I whistle to my dog when he is out of sight in the woods and on the far side of a pond. If he is used to responding to my whistle, he will run around the pond, jumping fences, avoiding trees and stones, neglecting the trails of other animals and perhaps even refusing to linger for a moment's exchange of greetings with another dog. The whistle aroused some mechanism in my dog which kept him moving towards his master and inhibited his reaction to other stimuli. In the same way, hunting dogs often give such strict attention to the scent on their trail that they pass quite close to rabbits in plain sight without noticing them. They seem to be set for following the trail with their noses as mechanically as an electric toy train follows the rails. Carrier pigeons released over enemy lines during the war carried messages back in the face of the greatest physical danger. They were set to return home. Perhaps the most remarkable illustration of this homing instinct, is the experiment with terns in the Gulf of Mexico. A group of birds was taken out 500 miles across the water, and, within a week, eight of the ten had reappeared on their nests. We do not understand how the homing sense works, but something seems to set a mechanism for this surprising achievement.

The human mind as well as the human body may be set for special activities. Any sort of problem or question tends to give us a mental set. Suppose I ask you to name all the animals you can think of, and you start busily with pencil and paper. I am pretty sure you will not be bothered with the names of plants, or the names of autos, or any other groups of things. The digits 8 and 3 may suggest merely 83; or 11, the sum of 8 and 3; or 5, the difference between 8 and 3; or 24, the product of 8 and 3; and what the figures mean depends upon the mental set. The "opposites test" gives a very interesting illustration of mental set. I tell you that I am going to read a list of twenty words and that after each word you must give the opposite. I might give a list of very simple words such as "long," "wide," "far," or I might take a more difficult list using such words as "amiable," "stubborn," "incorrigible," "facilitate." In either case, you would have very little inclination to write a synonym for a word I gave since I had not arranged beforehand that you should give synonyms. Still more complicated mental sets may be determined through preliminary instruction. I might say, "Give me the whole of which my word is a part": elbow (a part of body), hinge (a part of door), page (a part of book). Or I might say, "Give me a part of which I give you the whole": apple (which suggests core), clock (which suggests hands), knife (which suggests blade). The "analogy" test is another simple method of illustrating mental set. I give you three words to which you are to add a fourth having the same relationship to the third, as my second had to my first. "Eye is to ear as sight is to ..... Monday is to Tuesday as April is to ..... Bird is to sing as dog is to ....."

Quite a different type of mental set is found in "expectation." We see what we expect to see. A very amusing example of a series of

such illusions is given in an unpublished poem called:

COUNTRY LIFE

John! Is that the baby crying?
Or the next-door windmill sighing?
Or is it just the wind among the trees?
Can it be the neighbor's pup?
Or the cistern filling up?
Or the cattle lowing faintly in the breeze?

It may be just the cat!
Or if it isn't that
It's roosters waking up again, that's all.
Sh! He's rattling his crib bars.
Or is that the distant cars?
Or horses kicking madly in the stall?

Yes, the city's roar and rattle
Is much noisier than cattle,
And baby's cries would be drowned out, I fear.
But such homogeneous noise
Wouldn't so upset my poise
As the variegated silence does, out here!

Illusions of expectation are often very troublesome. We imagine we hear our name mentioned. Our attention is caught at once, and if we think our name has been spoken by an unfriendly person we may readily assume he has said unpleasant things. Deaf people are often suspicious because they hear only a part of what is said, and when they see people laughing and talking it is natural to suspect that the joke is on them. Unsociable people often become very suspicious and in extreme cases we find a delusion of persecution developing—the assumption that all the people around them are constantly attempting to do them harm. The creak of a rocker is interpreted as the voice of someone using uncomplimentary names and the sound of the wind becomes the words of an unfriendly critic. In extreme cases there may be no external cause, the words heard being hallucinations, created entirely within the mind of the unhappy subject. Seeing ghosts and hearing burglars are very common experiences. Who can go through the woods on a moonlit night or pass through a cemetery after dark without "seeing things?" If we are awakened suddenly at night, how easy it is to interpret the queer shadows cast by the moonlight as ghosts or to feel perfectly sure that the creaking stairs are warning us of a stealthy intruder! In all such cases our past habits of thought tend to set our attention and our associations for some such interpretation.

In our social relationships, mental set is clearly important. When we are in church, we are set for a particular kind of behavior, and anything that does not fit in with the atmosphere of the service, seems so incongruous that sometimes very innocent variations seem convulsingly funny. Many a solemn occasion has been seriously disturbed by a stray dog wandering up the aisle, and many a good sermon has been expounded in vain, because the minister's necktie developed a tendency to move over in the direction of his right ear.

In school we have a different mental set for each subject. It is of no help to take into our class in mathematics the events and dates we have learned in our history, and if we sit in our German class and think of the discoveries we have just made under the microscope, we may have an embarrassing moment bringing our minds around to give the proper answer to a question from the teacher. At play we are set to meet the movements of the game, and at a dance, our whole conduct may be different from what it is at a picnic. Our emotional attitudes also give us definite sets. The happy or optimistic person, in all his thoughts and words gives us a different picture from the anti-social or pessimistic. One might almost say that each of the hundreds of words we use for character qualities could be considered a distinct mental set. "Faithfulness" indicates that we can depend upon one; "prudence" signifies that conduct will be regulated wisely; an "energetic" person is expected to do his full share and a "sympathetic" person to comprehend and help us adjust to a sorrow. In each case we expect the behavior described by the char-

acter quality with as much assurance as we expect a ball to fall to the ground when we drop it. The kind of person we have come to be through habitual action determines our future emotional set. Hence we trust our friends and guard ourselves from those who are set against us.

As contrary sets interfere with each other, it is essential in work as in play to have one mental set at a time. Long ago a wise man said, "Do one thing at a time," and now we understand why the rule is so important. If you have ever tried the hop, step and jump, you will remember how difficult it was to change from one movement to another, although any one movement is easy enough in itself. When we are set to hop, it is so much easier to go on hopping, and when we are set to step, it is very difficult to jump. "Tongue-twisters" throw us into helpless confusion because they demand a rapid succession of contrary sets. Try to say rapidly several times over, "proper copper coffee pot," "she sells sea shells," or "Peter Piper picked a peck of pickled peppers." Why is it so difficult? Because with every succeeding word there is just enough change from the word before to necessitate a complex new adjustment of the speech organs. An infant could repeat any one of these words over and over, but few adults can speak the series of changing syllables rapidly, except after long practice.

A very instructive illustration of the force of mental set may be observed by a deliberate change from one activity to another. Suppose that I give you a list of twenty words, and ask that after the first word you write an opposite, after the second a synonym, after the third an opposite and so on through the list. You would experience a considerable amount of restraint and inhibition, which might become extremely disagreeable. Let me quote two student reports of this experiment: "My mind after the first few words was in confusion. I couldn't seem to remember what I had done the time before, so I had to go back and figure it out. And then I would think of the opposite thing from what I was supposed to. Often, even toward the end, I had to figure out whether the word which came to my mind was an opposite or a synonym, I was so confused." "It was awful. I had a hard time remembering which word should be answered by an opposite and which with a synonym. Even when I finally got so I could alternate and came to a difficult word, I had to start all over again." A similar experiment with a column of figures illustrates the point very well. Arrange three columns of figures with ten pairs of figures in each column. With a stop watch, record the time needed to add the first ten pairs, then the time needed to multiply the second ten pairs; when you come to the third column, add the first pair, multiply the second, add the third, etc., and record the time. A similar sort of confusion, a lengthening of the time, and inaccuracy in the arithmetic are almost inevitable results.

This principle, that there is great saving in doing one thing at a time, and great waste, as well as discomfort, in trying to jump from one task to another, has led to a very important development in industry, which is commonly expressed by the word "specialization." Various carpenter jobs have been factored into their part processes. If a man is making a dozen window screens, he does not make one screen completely, and then turn to a second. If he is expert, he will saw all the wood for the whole set, then plane it all, then sandpaper it all, etc. After that the parts may be joined and the pieces of wire netting which have been previously cut, may be put on. Then the completed screens are ready to be painted. In factories this principle of specialization has been carried to such an extreme that there is often danger that the single operation which a man is trained to perform with great skill may become so monotonous as to be unbearable, or so automatic that he tends to day dream and runs the risk of having an accident through lack of attention. To obviate these difficulties, it is very

(*Continued on page* 16)

Diagnostic and Remedial Techniques in Teaching Arithmetic

Olive Prine

This paper discusses (1) the importance of computational aims in the curriculum, (2) the need for economy of time, and (3) diagnostic and remedial techniques as economical methods. It presents (4) diagnostic tests as constructed for the multiplication and division processes with fractions, (5) the interpretation of the results of these tests, and (6) related remedial drills. It discusses (7) the elimination of cancellation as an uneconomical process.

1. Certain minimum skills must be mastered and certain mathematical information must be assimilated before the child can develop an appreciation for, or an ability to engage in, mathematical types of thinking. The importance of the computational aims in the education of both the seeing and the blind child is recognized.

The first of the well-known cardinal aims of education is the "command of the fundamental processes."[1]

Lide studied the listed objectives of 47 outstanding mathematics curricula. For grades seven, eight, and nine "accuracy and facility in the fundamental processes" was included by 40, 39, and 35 curricula, respectively; "computation" by 24, 22, and 17; "fundamentals" by 9, 6, and 6; etc.[2]

For the purpose of securing adequate mastery, Miss Tompsie Baxter, Miss Emily A. Barnes, and other teachers in Lincoln School of Teachers College, New York City, reserve three hours weekly for arithmetic in addition to the content of integrated curricula.[3]

Mrs. Frieda Kiefer Merry of Perkins Institution, Watertown, Massachusetts, discovered, from the results of a questionnaire sent in 1929 to many superior blind persons, that "thorough fundamentals" in arithmetic was a desirable objective in the curriculum of the schools for the blind.[4]

Ralph Vickers Merry, in his book, "The Education of Visually Handicapped Children," writes: "It is not proposed that the mastery of fundamental tool subjects be abandoned as a major aim in elementary education for blind pupils, . . ."[5]

Dr. William Spellings, of the Tennessee School for the Blind, Nashville, Tennessee, stated at the 1938 convention of the American Association of Instructors of the Blind that all blind people "are likely to need some mathematics" and that "that mathematics will mainly be arithmetic."[6]

Mr. H. Alton Davis, of the Wisconsin School for the Blind, Janesville, Wisconsin, said at the same convention, "Let every teacher set himself the task of teaching fundamental skills to all."[7]

2. The problem of reaching a standard of usefulness in the manipulative processes in the least possible time becomes increasingly pressing. Society, with its changing complex problems, and the blind, with their problems of social and economic efficiency, demand ever larger shares of the curriculum and time schedule of the school.

The educational media of the blind child:

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[1] N.E.A. *Report of the Commission on Reorganization of Secondary Education.* 1913.

[2] Lide, Edwin S. *Instruction in Mathematics.* Office of Education Bulletin, 1932, No. 17, Monograph 23.

[3] Hopkins, Thomas L. *Units of Work.* Lincoln School Curriculum Series, 1933 et al. Bureau of Publications, Teachers College, New York.

[4] Merry, Frieda Kiefer. "What Blind People Think About Arithmetic." *Teachers Forum,* II (1929), No. 1, 8-10.

[5] Merry, Ralph Vickers. *Problems in the Education of Visually Handicapped Children.* Cambridge. Harvard University Press. 1933.

[6] Spellings, W. W. "The Place of Mathematics in the Junior High School." *A.A.I.B. Proceedings,* 1938, 136-138.

[7] Davis, H. Alton. "What Mathematics Should be Taught in a School for the Blind." *A.A.I.B.,* 1938, 55-58.

reading braille, writing braille, oral directions and individual instruction as opposed to imitation and group demonstration, are time-consuming. The number and magnitude of the blind child's needs and the time required for their satisfaction, therefore, are great.

Such factors, indicating the need for efficient methods in developing skills, have led to the use of diagnostic and remedial techniques in teaching. These same factors make it important that all processes not basic or materially time-saving be eliminated from the curriculum as outlined for all children. Each process must be evaluated for essentialness and efficiency.

3. By diagnosis, both achievement and difficulties may be determined. Teaching time can be allotted accordingly and without waste. Diagnostic and remedial techniques are useful in situations where deficiencies must be discovered and skills reestablished before further learning can proceed with success.

The materials of diagnosis and of remedial teaching are (1) diagnostic tests and (2) practice forms.

A complete diagnostic test should contain at least one example of every type of difficulty encountered in the given process. The types of difficulty are determined by analysis, seeking for the elementary processes required in solution and by classification of the discovered tasks. The test is built by the selection and arrangement of examples so that usually only one additional element is tested in each successive example.

4. The following diagnostic test has been prepared to be administered at the beginning of the seventh year of arithmetic. Its purpose is to determine achievement and difficulties in multiplication and division with fractions. It can well be used at any time after the completion of the study of fractions.

Success in a preliminary summary test of three problems denotes satisfactory knowledge and skill and indicates that there is no need for further special attention. Errors reveal possible difficulties which should be investigated. Seven short tests follow. Difficulties in the earlier tests need to be overcome before the later tests are attempted. Test *A* checks ability to recognize integers, fractions, mixed numbers, and the signs used to indicate multiplication and division. Test *B* checks recognition of numerators, denominators, divisors and ability to invert. Test *C* measures ability to convert mixed numbers and improper fractions and to reduce. Test *D* reveals difficulties in the multiplication of numerators and denominators and in the formation of the product fraction. Test *E* adds the simplification of the product fraction. Test *F* checks the division processes. Test *G* adds to these the simplification of the quotient fraction.

PRELIMINARY TEST

Material given to pupils

Find the answers:

I. $2/5 \times 2\ 1/3$
II. $1\ 2/3 \div 2\ 3/4$
III. $8\ 4/7 \div 5$

TEST A

Material given to pupils

Write in words:

I. $5/9$
II. $1/25$
III. $9\ 1/3$
IV. $3 \times 3/4$
V. $1/2 \div 5$

Elements tested

I. Recognition of fraction
II. Recognition of fraction with a two-digit term
III. Recognition of mixed number
IV. Recognition of whole number and multiplication sign
V. Recognition of division sign

TEST B

I. In the problem 2/3 × 4/5, the numerators are	I. Recognition of numerators
II. In the same problem the denominators are	II. Recognition of denominators
III. In the problem 2/3 ÷ 4/5, the divisor is	III. Recognition of divisor
IV. In the problem 9/10 × 5, the denominators are	IV. Recognition of unexpressed unit denominator
V. 7/8, when inverted, becomes	V. Ability to invert

TEST C

I. Change 2 3/4 to an improper fraction	I. Ability to change mixed number to improper fraction
II. Change 11/8 to a mixed number	II. Ability to change improper fraction to a mixed number
III. Reduce 6/9 to lowest terms	III. Ability to reduce by one prime divisor
IV. Reduce 12/30 to lowest terms	IV. Ability to reduce successively or by non-prime divisors
V. Change 30/24 to a mixed number in its simplest form	V. Ability to combine reduction and the change to an improper fraction
VI. Change 100/20 to its simplest form	VI. Ability to reduce to integer or to change improper fraction to integer

TEST D

Complete:

I. 2/3 × 5/7	I. Fraction times fraction; multiplication of numerators, multiplication of denominators, and formation of product fraction
II. 1/3 × 1/4	II. Fraction times fraction; unit numerators
III. 3 × 3/10	III. Whole number times fraction (or denominator unexpressed)
IV. 2/7 × 3	IV. Fraction times whole number (or denominator unexpressed)
V. 3 1/5 × 2/9	V. Mixed number times fraction (4 elements combined)
VI. 1/6 × 2 3/4	VI. Fraction times mixed number (4 elements combined)

TEST E

Complete:

I. 4/5 × 1 1/3	I. Fraction times mixed number *combined with* changing improper fraction to mixed number
II. 3/4 × 2/5	II. Fraction times fraction *combined with* reduction
III. 2 1/10 × 4	III. Mixed number times whole number *combined with* changing improper fraction to mixed number *combined with* reduction
IV. 1 2/3 × 2 3/4	IV. Mixed number times mixed number *combined with* changing improper fraction to mixed number
V. 1 1/3 × 1 5/6	V. Mixed number times mixed number *combined with* changing improper fraction to mixed number *combined with* reduction
VI. 2 1/4 × 1 7/9	VI. Mixed number times mixed number *combined with* reduction of improper fraction to integer

TEST F

Complete:

I. 2/3 ÷ 3/4	I. Dividing fraction by fraction; inverting divisor and proceeding as in multiplication
II. 2/3 ÷ 5	II. Dividing fraction by whole number; inverting integral divisor and proceeding as in multiplication
III. 7 ÷ 1/4	III. Integer divided by fraction
IV. 8 ÷ 8 1/3	IV. Integer divided by mixed number
V. 1/2 ÷ 2 1/9	V. Fraction divided by mixed number
VI. 2 2/3 ÷ 3 3/4	VI. Mixed number divided by mixed number
VII. 5 2/3 ÷ 7	VII. Mixed number divided by whole number

TEST G

Complete:

I. 9/16 ÷ 3/8	I. Fraction divided by fraction *combined with* successive reductions and changing improper fraction to mixed number
II. 3/4 ÷ 6	II. Fraction divided by integer *combined with* reduction
III. 8 ÷ 3/4	III. Integer divided by fraction *combined with* changing improper fraction to mixed number
IV. 10 ÷ 1 1/2	IV. Integer divided by mixed number *combined with* changing improper fraction to mixed number
V. 3 1/8 ÷ 5	V. Mixed number divided by integer *combined with* reduction
VI. 4 1/5 ÷ 1/3	VI. Mixed number divided by fraction *combined with* changing improper fraction to mixed number
VII. 7/8 ÷ 1 1/8	VII. Fraction divided by mixed number *combined with* reduction
VIII. 6 2/5 ÷ 2 4/5	VIII. Mixed number divided by mixed number *combined with* changing improper fraction to mixed number *combined with* successive reductions

5. The teacher will find it convenient to tabulate errors in the manner shown below.

TEST D

Problem number

Pupil number	I	II	III	IV	V	VI
1						x
2	x	x	x	x	x	x
3						
4					x	x
5				x	x	x
6	x					
7						
8		x			x	x
9						
10					x	

Such a table readily indicates the needs of the class and of each pupil.

It may be concluded that pupils 3, 7 and 9 have satisfactory ability and may be excused from drill. Pupil 2 needs instruction in all of the processes. Analysis of the errors of pupils 5, 6, 8 and 10 may possibly reveal errors in combinations or carelessness. These should be remedied individually. The class as a whole needs instruction and practice in problems involving mixed numbers.

A diagnostic test will locate errors but it will not reveal the nature of, nor reason for, the errors. Consideration of the incorrect an-

swers may point to the faults. For example, in the problem 1/3 x 1/4, an answer of 2/12 or 1/6 may mean addition of numerators; but if this same pupil has the correct solution, 10/21, for the problem 2/3 x 5/7, the 2/12 probably indicates careless multiplication or actual difficulty with the combination 1 x 1. In 2/3 ÷ 3/4, the answer 6/12 or 1/2 shows failure to invert, 9/8 or 1 1/8 shows inability to recognize divisor or inversion of correct quotient, 12/6 or 2 shows inversion of both fractions, 17/12 or 1 5/12 indicates addition, a failure to recognize the process required, 8/0 might be the result of a braille writing error, and an answer such as 5/7 reveals a gross lack of knowledge.

The teacher, in planning remedial instruction will stress correction of the actual faults of the pupils in the class rather than spend time in reviewing the whole process, which perhaps in some cases will not touch upon the difficulty of the pupil at any point. The teacher must realize that errors in fractions may be the result of many factors which must be discovered and corrected before successful achievement is possible.

Some of the deficiencies associated with failures in fractions are the following:

(1) low intelligence, (2) poor health, (3) distractions, (4) lack of concentration or persistence, (5) lack of desire, (6) careless habits of work, (7) disorderly mental traits, such as transposition, substitution, and forgetting of items, (8) poor braille reading, (9) poor hearing (oral work), (10) poor braille writing, (11) low ability in combinations, and (12) lack of understanding of the meaning of a fraction, associated with lack of experience with quantitative concepts.

If the element causing failure is not readily apparent, the teacher may discover it by listening while the child orally explains his mental processes as he works through a similar test.

6. Remedial techniques consist of appropriate motivation, instruction, drills, and testing. These steps are repeated if necessary. Drill material should consist of problems identical in processes with the ones in which there were failures on the diagnostic test and in other more complex problems involving the same difficulties.

Drill material prepared for use in case of error in problem 2, Test E, follows:

Practice Problems for *Test E, problem 2*

1. 3/8 × 2/5
2. 3/5 × 5/7
3. 4/5 × 3/4
4. 5/6 × 9/11
5. 4/15 × 3/8
6. 22 × 3/8
7. 9/10 × 5
8. 1/3 × 1 1/2
9. 2 4/5 × 1/4
10. 8 1/3 × 1 1/5

7. This unit ignores cancellation as a primary process with fractions. Reduction is preferable for blind children.

Reduction is a fundamental process in the addition and subtraction of fractions. Therefore it cannot be eliminated and must be learned. After it has been mastered, its use in multiplication and divison will obviate the spending of teaching-time which would be necessary with the process of cancellation. Use of reduction with all four processes permits a higher degree of mastery to be attained in it and therefore in all the four. Certainly, for the blind person, as for others, accuracy is the primary aim in calculation. Reduction lessens the chance of error by transposition, substitution, and forgetting, by immediately converting the four terms to two terms. Cancellation retains four terms until the end. It is true that the first product fraction before reduction may possibly involve large numbers, whereas cancellation would result in smaller numbers. In real life, however, fractions and their products are not cumbersome. Cancellation, the act of crossing out, loses its speed value when transferred from the visual field to the tactual field or mental image—from the tools of pencil and paper to the TVL or braille slate and stylus, or mental calculation.

8. This article has attempted to show in a small way how a teacher by "taking thought" can modify and adapt the curriculum to better meet the needs of her visually handicapped pupils.

The bibliography of this article and a note in regard to the author are to be found on pages 18 and 19.

Dr. Allen Says:

To the Class of 1939 Graduating from the School at Overbrook

My Friends:

For you the present occasion is one to be remembered. Having concluded your studies here you are about to enter the arena of real life. It is your Commencement Day. So a few grandfatherly remarks now will be fitting.

When Charles Curtis was breaking home ties, his grandmother, a red Indian, reputedly bade him bear in mind that America belonged to the *redskins* no longer but to the *palefaces*. That he acted on this reminder is evident, since he made himself generally acceptable and became, as you know, Vice President of the Republic. Again, when promising young negroes enter the Hampton Normal and Agricultural Institute they are taught that the color of their skin is something to be carried proudly, not only there but all through life. You, too, my young friends, wear a very particular badge which it behooves you to look, not down upon as an affliction, but rather up to as a call and incentive alike to social acceptability and to nobility of character.

One of your brothers who long ago was blinded while celebrating "the Glorious Fourth," on realizing that he would never see again, supposed that little was left him but to sit, fold his hands, and be good. Now, is it altogether a mistaken notion that to be bad requires eyesight? Probably not. Anyway, this brother lived on, being a good man, and becoming a hero to his fellows in darkness, and their champion. A visit to a school like this one of yours had shown him that he might use his blindness as a stepping stone to higher things; and having mounted upon it, he attained his ambition, which was to make his life count for the most possible.

Perhaps altogether too many of your fellows are content to be more or less leaners upon a willing world. Now, in order to be lifters in it you privileged ones must cultivate a self-respect through making good all along the line. Real success comes only to those who aim at perfection, not alone through doing many things as well as those who see do them, but better—much better than the average. I knew a concert pianist who wanted only a given blind man to tune his pianos; knew also a college president who, because only the blind secretary among his office staff was completely reliable, would let no other type his important letters.

Yes, you must excel others in this doubting, yet demanding world, or be content to let the merely seeing monopolize its opportunities and benefits. Recently a placement agent in our field, on being cautioned never to place a known incompetent blind individual in an outside job, exclaimed: "What a novel idea! Am I not to scatter work among all my charges?" He was to learn that a single conspicuous failure of a blind person keeps our work as a whole down more than a dozen successes can repair and lift it up.

Which brings me to a matter I would fain impress upon you at this time. You owe a duty to yourselves, of course; also to your home friends, and naturally to your school; but your greatest obligation is to all your fellows in blindness, and that is, to help raise your and their common status. This duty is what is called corporate responsibility. Ponder the matter, my young friends. Take it, like time, by the forelock and, holding it fast to the end of life, let it be said of each one of you: "He has made the world better and sweeter for his sojourn in it!"

DIRECTORY OF ACTIVITIES

For the Blind

in the United States and Canada

Compiled by

Ruth Elizabeth Wilcox and Helga Lende

Third Edition, 1938

Price, postpaid, $1.25

A Nursery School for Children With Impaired Vision

Olive McVickar

As I begin a discussion of our nursery school, it is impressed upon my mind that the past has had considerable bearing upon the present situation, and it seems wise to review briefly the events which led to the organization of the school.

While Isabel Greeley was a teacher in the Perkins kindergarten she came to realize that the children who were coming to her at five and six years of age were in need of care and training long before that age. Accordingly, at her suggestion, the Boston Nursery for Blind Babies was organized in 1901. With Miss Greeley in charge, it started its activities in a private house in Boston. The organization, then, as now, was entirely separate from Perkins Institution, though closely allied in ideas and purposes.

In 1907, the nursery moved to its present location, a large comfortable home designed for the housing of twenty-five children with totally or partially impaired sight. Here, too, are accommodations for an adequate staff, and the facilities for necessary medical and surgical attention. Besides competent persons in charge of the physical care of the children and a graduate nurse, the staff also includes a pediatrician, an ophthalmologist, an orthopedic surgeon, a nose and throat specialist and a dentist, who make regular visits. Intelligent care and training is provided for the children.

It was in the fall of 1934 that the nursery school was organized, and our staff at present includes two trained nursery school teachers and a part-time psychologist. The school started with the eighteen children then living at the nursery who were between the ages of two and five. The younger children entered the nursery school as they became old enough. Now, we have a second group of children who come to nursery school as day pupils. These are children living in the vicinity of Boston who need the special training of the nursery school. They are sent for each morning and remain through the day, returning to their homes in the late afternoon. We also reach children who live too far away to attend with the day group. These are called for each Monday morning and returned to their homes on Friday afternoons. For the few who do not wish to send their children to school until they are older, we have a regular schedule of home visiting. Mothers are given advice and often supplied with play materials for the children to use at home.

We have called our school a "nursery school for children with impaired vision" because this title seems most clearly to describe it. All preschool children with impaired vision are eligible, whether they have no sight or only slightly defective sight. In all cases they are in need of a special environment, either to make up for their lack of sight or to conserve what sight they have. Children of low mental capacity are not eligible though we often take a borderline case for a period of observation and study. The children come to us from all over the United States and we make no distinction of race or creed.

The considerations which we had in mind when we began this experiment in preschool education were little different from the fundamental principles underlying the conducting of any nursery school. It seemed to us rightly so. The fact of visual handicap could have very little effect on the fundamental needs of children from two to five. It was, then, a matter of adapting nursery school procedure rather than formulating new fundamental concepts.

I believe that we have found that this was a correct assumption. For all children, the preschool years are a time of tremendous

growth and extremely rapid physical development. In the space of two years the stumbling, uncertain two-year-old becomes a lithe confident four-year-old, skillful in the use of his muscular equipment as he runs, jumps and climbs. This is also a time of vigorous mental growth during which he accumulates a vast amount of knowledge, largely through sensory experiences. He becomes a creative individual because he has ideas to express. It is a time, too, when he is changing from a solitary being to one who enjoys social interplay. He likes to give and take in the normal social relationships of his day by day activities. He takes his place as either a leader or a follower in the social milieu in which he finds himself.

It is obvious that our first consideration was to provide an environment in which the child could satisfy these fundamental needs. It must be one in which he would feel comfortable and at ease. It meant low tables and chairs fitted so that he could sit with his feet on the floor; it meant low cupboards where he could easily reach the toys and materials kept there and where he could put them away; it meant low hooks where he could hang his things; and it meant apparatus which he could manage easily and with success in his play. We were concerned, too, with creating an environment in which the child with some degree of sight could work and play comfortably. This meant window shades of crash material which would let the light through without glare; furniture and cupboards painted a soft dull green to avoid noticeable reflection; pictures of bright colors and simple in design and outline and toys of easily distinguishable colors. These as well as many other considerations were important.

The question of environment is closely related to the development of motor skills. In the case of children from two to five the successful control of motor coordinations plays a large part in giving them confidence and security. If they are provided with an accessible place for their clothing, and low hooks, they are interested in hanging it up. They are also interested in dressing themselves. By the age of two, the children show considerable initiative and effort in this respect. They may arrive downstairs from a nap with dresses on backwards but that does not matter. The important thing is that they have put the dresses on for the first time and they are very proud of the fact. They can learn the next time how to identify the front. By three they can accomplish all but the very difficult buttons and by four they are able to dress with considerable speed and neatness, even to tying shoes.

The processes of bathing, brushing the teeth and combing the hair involve other motor skills, usually well learned by three and skillfully executed by four. Each child's things are hung on three low hooks, above which is a symbol which he knows as his own. The symbol used is a figure of an animal cut from ply wood and affixed to the wall. This effects a raised figure which can be felt easily. It is simple in design yet distinctive and is painted in bright colors for those who see. Each child has the same symbol on the small shelf where he keeps his own soap and cup and it is also placed on the locker where he keeps his clothing. Thus there is a consistent identification of all of his belongings.

Eating, too, is a motor skill. By two years old he is eating independently, though we expect some spilling. By three he is eating quite skillfully with very little spilling and by four he has graduated to napkins, forks and knives. Dinner is more than a time of eating. It is a social time, also, and we encourage conversation and a general discussion of the morning events.

It is in outdoor play that the greatest motor activity takes place and for that reason a large portion of the day is spent outdoors. We are extremely fortunate in the variety of our yard space. Besides a large grassy lawn, there is a paved yard for play, with tricycles and all the wheel toys, and a sand bed where shovels and pails may be used. A small shed which is easily accessible contains all of the

outdoor appliances. Here the children choose what they want to use and put it away again when they are through with it. Sometimes they choose the large building blocks or the packing boxes or orange crates for imaginative play, at others the light sturdy ladders, and at still others the pails and shovels.

They use a variety of muscles when they play. They push and pull carts, lift and pile boxes, climb, run and dig. At two they are mostly concerned with the shovels and with hauling the carts. By three they have conquered the tricycles and the jungle gym and by four they busily engage in making a train of the orange crates or a fire engine with the ladders.

We were considerably interested in an experiment with roller skates. Some of the four-year-olds asked for them as the result of a story. Later, the younger children insisted on trying them also and even the two-year-olds went about with surprisingly few bumps. We were amazed to find that the children with no sight were at once at home on the skates, whereas the children with sight required a certain length of time to become used to them. We also found that roller skates were excellent for the children whose feet had a tendency to turn inwards. In using the roller skates, it was essential that their feet be pointed straight ahead; otherwise they became tangled with each other. Skating has helped many of the children to better foot posture and it seems to be a thoroughly delightful experience for them.

We have already seen that the years from two to five are outstandingly the years when the child is collecting sensory impressions. It is our concern to provide him with a rich sensory experience, based on other senses than sight. Accordingly, we have used a varriety of handwork materials providing tactile stimuli, we have emphasized music as an important activity which provides a wide auditory experience and we have provided olfactory and gustatory experiences as well.

We use both plasticene and regular pottery clay. The latter has the advantage that it can be hardened and preserved so that the child has a more or less permanent result of his creative effort. It can be painted, too, and this is a further advantage for the children who enjoy color. We carried out an experiment with dough, which also can be used as a manipulative material. The children make biscuits of original design and place them in the oven to bake. This provides a taste experience as well as a touch sensation. The work with clay has been of considerable value to us. We are often able to discover through the child's expression in clay some rather important misconceptions due to faulty perception. These appear also in the use of other materials, though, I think, not so markedly as with clay.

Carpentry is another manipulative experience and a creative one as well. By two and a half the child has learned to hold a large headed nail in place while he pounds it with a hammer. He is quick to learn the relative positions of hand, hammer and nail, perhaps because he finds that he pounds his finger if he is not careful. By three he can nail two pieces of wood together. This looks like an airplane and before long he is making other things. By four he is quite skillful with the saw and is eager to make a boat, sawing the bow to a point. He is equally delighted to try it out on the pond and to find that it floats.

Blocks are a good medium of expression. Sometimes the children use the small sets of cubes at the tables or make a more extensive creation on the floor with the large, brick-size blocks. Here we see the child's imaginative processes at work, which sometimes result in elaborate designs. Very often we see an expression of rhythm and balance which is quite remarkable.

The children who enjoy color use poster paints of bright shades. With large brushes they can make bold clear lines on their paper which they can see easily. Finger painting is enjoyed, too, and also the use of large soft crayons. Scissors and paste are less adaptable as a means of expression but they are thor-

oughly enjoyed from a manipulative point of view.

There are many other materials, such as pegs and beads, puzzles and color towers which can be used. We have done some experimenting with an adapted peg board on which a small raised symbol could be matched instead of colors. This proved very practical with the older children. We have also experimented with "pictures" of sandpaper pasted on smooth paper. The children use these in a variety of ways. Small boxes filled with various substances, weighted cubes, and materials of various textures to be identified all have a place in sensory development.

Along with handwork our emphasis has been on music in all of its various forms. This is predominantly an auditory stimulus but also embodies motor development and imaginative expression. I believe that blind children respond to music more fully than to any other stimulus. Music involves a variety of experiences. Sometimes the response is to pure rhythm by clapping or jumping. At other times it is by playing the marimba or the Deagon gong which have accurate pitch. These are often supplemented by bells or drums and sometimes by triangles and tambourines. Music makes possible the expression of imaginative ideas and feelings and it involves singing all the nursery rhymes and many other songs. Music is also a creative art, because the children dance to it, expressing, each in his own way, the feeling aroused by the music. There is always plenty of time for listening to the victrola, sometimes to music from the symphonies, sometimes to a cello or a violin and at other times to songs. The music listened to is varied and wide in scope. Blind children are able to comprehend a far more intricate kind of music than their seeing contemporaries. They make music a part of them. We often hear a child singing the hammer song as he pounds a nail vigorously; a child galloping about the yard sings happily, "Here I Come on My Pony," and very often we hear strains of the Toreador Song as they play.

Stories are important in our plans for the nursery school. Not only do they provide information and imaginative stimulus but they are largely responsible for the enlarging of vocabularies and the conveying of new meanings. The children like poetry as well, and they like it for the rhythm and the flow of words as much as for the meaning.

Stories have been the principal reason for almost all of our excursions. The pupils gain a great deal of information from a trip to the roundhouse, where they ride in an engine and watch the turntable; from a visit to the airport, where they climb into one of the large planes and thoroughly explore it; from a trip to a fire, to a dairy farm, to the zoo, where they are enchanted by the birds, to a florist shop, which is a delightful "smelling" experience, and to a carpentry shop—these and others, we believe, provide a very real source of information and interest.

Other of our activities include caring for a vegetable garden, even to cooking and eating the vegetables when grown. Caring for pets such as bunnies, chickens, turtles, kittens and puppies, is another interesting activity. They enjoy the responsibility of feeding and caring for them and take turns doing it. These, then, are some of the actual procedures in our nursery school. During these five years we have experimented in many ways and are still doing so. Ours is a venture which never stands still, and we can never cease learning.

We have found out many things about these preschool children who are visually handicapped. We know that they are exceptional in music comprehension. We know, too, that they generally have an astonishingly well developed power of memory. We know that on the whole blind children are slower to achieve emotional stability and we know that there are many reasons for this. We know that their social development progresses in a different way from that of their seeing contemporaries. They go through a longer period of solitary play and a longer period of what with seeing children is called "parallel

play." They are satisfied with one companion for a longer period and are slower to initiate group play. Their speech is often late in development but just as often it is surprisingly early. In their creative work we see a difference in the way they progress from one stage to another. Unlike seeing children, they require only a short period of manipulation and progress quickly to the symbolic stage. We find that they remain longer at this stage before going on to realistic creative expression. We find that they ask many more questions than seeing children and we know that it is extremely important that each question be answered carefully and correctly in order to avoid any error of understanding. No matter how trivial the question seems to us, the fact that it has been asked makes it important.

We know that a blind child needs affection of the right kind. He needs the stability of warm friendships with others. He needs to acquire the habit of reasoning things out for himself and this is probably the greatest factor in bringing about emotional stability. If he forms the habit of reasoning when he is three or four he will never lose it. It is our responsibility, because he must learn how to reason by hearing us do so. Finally, he needs a sense of humor, which someone has called a sense of proportion. This, too, he can learn from us. It is more than a pleasant trait of personality and will lead to earlier emotional maturity.

We have, then, in the nursery school tried to create a natural environment, rich in sensory experiences, providing for optimum physical development, stimulating the expression of creative ideas and providing for the understanding of social living. In other words, we have tried to create a situation in which visually handicapped children of preschool age can gain confidence and happiness through normal expression and activity.

Mrs. Olive McVickar, a graduate of the Boston Nursery Training School, is now Educational Director of the Boston Nursery for Blind Babies.

(*Continued from page 5*)

common to have men work a few hours on one operation and then turn for relief to another.

Even the humble operations of the home illustrate the principle of mental set and the needs of specialization. Dishwashing, for instance, is not a simple, unitary process, but a relatively complex job involving a number of distinct part processes. The "green girl" tends to dump everything into the dishpan and not only takes a good deal more time than the experienced person, but uses up more material and has less satisfactory results. Washing the dishes for two or three persons may not illustrate the point very well but if ten persons are served, the specialization becomes much more important. We realize then that collecting and sorting are important, for china, silver and glassware should each be treated differently. A considerable amount of time is saved if the dishes are scraped before they are put into the water, for the cleaner the water is kept, the cleaner the dishes will be. The skilled domestic knows all this and sets herself for one operation and then another. Mechanical dish-washers and clothes washing machines embody the same principle of job analysis and specialization in operation.

Mental set is a fundamental principle of action found as constantly in men and animals as in machines, and functioning as regularly in play as in work. It is a very great help in the attainment of efficiency, and with efficiency comes the joy of successful achievement. Changing the mental set is wasteful of time, effort and materials. The human mind is so constructed that it can utilize but one set at a time and must be reset for a second action. Our great aim must be to plan changes so that they are frequent enough to relieve monotony and the danger of accidents, without losing the advantages of warming up. "Do one thing at a time, and do it well." Then you may turn to another activity with reasonable assurance of success.

Get your copy of the Directory.

Our Bookshelf

KATHRYN MAXFIELD, PH.D.

LAST SPRING we discussed the report by Dr. Paul A. Brown on his use of the Neymann-Kohlstedt Diagnostic Test of Introversion-Extroversion. "Responses of Blind and Seeing Adolescents to an Introversion-Extroversion Questionnaire," (*Journal of Psychology,* 1938, Vol. VI, pp. 137-147.) At the same time and with the same subjects Dr. Brown collected data for a study of neurotic tendencies, using the Clark-Thurstone Inventory. "Responses of Blind and Seeing Adolescents to a Neurotic Inventory," (*Journal of Psychology,* 1939, Vol. VII, pp. 211-221.) This study merits the consideration of both administrators and teachers. In the introversion-extroversion study the blind boys rated as more extroverted than the seeing boys and girls, whereas the blind girls rated as the least extroverted of any of the subjects. In this study the blind boys score as being less neurotic than either the boys or girls in institutions for the seeing and the blind girls score as being the most neurotic of all. Results such as these call for further study and interpretation, primarily by the staff members of the five cooperating schools for the blind but also by other superintendents and teachers who are considering methods of "normalizing" the social atmosphere in their institutions. Brown notes the fact that the score for girls is adversely affected by the high incidence of neurotic responses in one school. This is a fact well worth knowing by the superintendent of that school since it may give him his first opportunity for locating what might be called foci of neurotic infection.

These studies by Dr. Brown throw important light, not so much on differences between the blind and the seeing, since his distinction between these two groups is not adequate, but on the influences existing in residential schools for the blind and in those for the seeing. Further studies of this sort could yield much of value.

For the last few years another psychologist by the name of Brown, Dr. Andrew W. of Chicago, has been working on an intelligence test for use with the visually handicapped, the first standardization of which has appeared under joint authorship. Davidson, Margaret and Brown, Andrew W. "The Development and Standardization of the I.J.R. Test for the Visually Handicapped," (*Journal of Applied Psychology,* 1939, Vol. XXIII, No. 2, pp. 229-249.) Dr. Brown's aim has been to develop a test "by which the same thing measured by the conventional intelligence test may be measured in those who are visually handicapped; not only in those who are blind but also in those whose vision is so defective that they might conceivably be at a disadvantage in performing on any of the usual scales." The test has two forms; each form being composed of ten sub-tests selected as follows: (1) Vocabulary (abstract and concrete combined); (2) Comprehension; (3) Arithmetic problems; (4) Repetition of the thought of a passage; (5) Repetition of digits reversed; (6) Opposites; (7) Similarities; (8) Disarranged sentences; (9) Number sequence; (10) Analogies.

The I.J.R. Test has been worked out with great care, both in the selection of tests and in the establishment of norms.

Last winter Theodor Heller died in Vienna. A pioneer in the field of child psychology, his first important professional contribution was a book on the psychology of the blind. *Studien zur Blindenpsychologie,* published in 1904, continues to be one of the major contributions on this baffling subject.

As a TEACHERS FORUM reader do you feel that this page is helpful to you personally? Your suggestions are earnestly solicited.

Eighteenth Biennial Convention of the A. A. W. B.

BILTMORE HOTEL, LOS ANGELES, CALIFORNIA, JULY 10-14, 1939

MARJORIE S. HOOPER

THE Los Angeles Convention of the A. A. W. B. proved to be one of the most interesting and worth while sessions which the Association has held. Although the attendance did not break any records, a considerable number of workers in the East made the trip, and local workers for the blind and blind people evinced much interest in the proceedings of the meetings.

This year, the general session program was arranged in the form of panel discussions of some of the major pressing problems facing workers for the blind at the present time. Well-considered and thought-provoking papers by experts in the various fields were presented on such topics as:

Inter-Agency Relationships in Service for the Blind

Efforts at Cooperation in Work for the Blind

An Integrated State Program for the Blind —California

Literature for the Blind

Excellent round-table meetings were held by the various groups.

The presentation of a biennial award to outstanding workers for the blind was established as a permanent custom of the Association, under the name of the "Shotwell Memorial Award for Meritorious Service," such award to consist of an appropriate Scroll of Honor and a Distinguished Service Medal made of gold. Two awards were made: one to Mr. H. R. Latimer, Executive Secretary, Pennsylvania Association for the Blind, Pittsburgh, Pa., a past-President of the A. A. W. B., and for fifty years an outstanding worker for the blind; the other to Mr. Charles W. Holmes, Hingham, Mass., also a past-President of the A. A. W. B., and a man who has given many years of distinguished service to work for the blind in both the United States and Canada. (Due to the serious illness of Mr. Holmes, the award was made to him *in absentia,* and the formal presentation of the medal and scroll were made at his home on July 28, in the presence of several workers for the blind and friends of many years.)

The following individuals were elected to office for the 1939-1941 biennium:

Colonel E. A. Baker, Toronto, Canada—*President*

Peter J. Salmon, Brooklyn, N. Y.—*First Vice-President*

J. Robert Atkinson, Los Angeles, Calif.—*Second Vice-President*

Alfred Allen, Winnetka, Illinois—*Secretary-General*

F. B. Ierardi, Boston, Mass.—*Treasurer* (re-elected)

All workers for the blind are urged to procure copies of the Convention Proceedings, which will contain excellent reference material concerning many perplexing questions which face workers for the blind today.

(*Continued from page* 10)

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Miss Olive Prine, a teacher at the Minnesota School for the Blind, has just had a year's leave of absence to enable her to complete the work for her Master's degree at Teachers College, Columbia University.

The Teachers Forum
for
Instructors of Blind Children

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The Editor will not be responsible for opinions expressed in signed articles

SEPTEMBER, 1939

Summer Session for Teachers

UP TO the present time the schools for the colored deaf and blind throughout the South have been handicapped because of the impossibility of obtaining sufficient trained teachers in these special fields of education, and there has been a considerable demand for such training by colored teachers.

In order to improve this situation a summer school for such teachers was conducted at West Virginia State College during the past summer. This college is fully accredited by the North Central Association of Colleges and Secondary Schools and is ideally situated for a training center for teachers from most of the southern states. It is located at Institute, eight miles west of Charleston, in the beautiful valley of the Kanawha River.

Although the funds to make the special courses possible were not assured until May 19, yet they were started on June 12 with a very creditable enrollment, and continued for eight weeks. During the last six weeks a demonstration and directed teaching school was conducted at the West Virginia Schools for the Colored Deaf and Blind, the grounds of which adjoin those of the college. Sufficient deaf and blind pupils in different grades were present to enable the student teachers to observe primary, intermediate and advanced

work. The practice teaching was done under supervision and followed carefully prepared outlines.

It is planned to continue this work next summer as a regular part of the services being rendered by the college. Students will be given a certificate upon the satisfactory completion of two summers' work (sixteen semester hours). The courses are open to undergraduate as well as graduate students, and will be given full value by other colleges.

It was indeed gratifying that so many teachers immediately took advantage of this opportunity and that some of our superintendents made it possible for all or most of their teachers to attend the session. It is to be hoped that students from all of the southern states may be present next year.

The following is taken from the announcement by the college in regard to the courses taught during the past summer:

FOREWORD

These courses are planned primarily for teachers in service and graduate students but may be taken by properly qualified, advanced students who are interested in these special fields of education.

Outline and Description of Courses Offered

Education 451S Problems in the Education of the Deaf and the Blind (*2 hours) Dr. Potts
MTTHF, 9:30 A. 210

Among the topics considered will be: The psychology of the blind and of the deaf, goals in the education of the blind and of the deaf, courses of study, vocational training, health, adjustment, the mentally retarded, socializing and leisure time activities, and placement.

Education 452S The Language Development of Deaf Children (2 hours) Mr. Dozier
MTTHF, 10:30 A. 205

This course will begin with the simple vocabulary and language forms of the deaf child upon school entrance and progress to the more advanced stages. Methods of presentation by demonstration with pupils will be a part of the course. The general aim will be to present the principles of language in a manner adaptable specifically to the deaf and not over emphasize the technical side of such a course.

Education 453S Primary Steps in the Development of Speech in the Deaf (2 hours) Mr. Dozier
MTTHF, 2:30 A. 205

This course will, in the main, have to do with the methods of presentation and development of the elementary English sounds, the mastery of the Northampton vowel and consonant charts, and oral and written forms in speech-reading. It will be accompanied by demonstrations with deaf pupils.

Education 454S Instructional Problems in the Education of the Blind (2 hours) Dr. Potts
MTTHF, 1:30 A. 205

Topics: The course of study, textbook, laboratory work, special methods of instruction, supervised study, supplementary reading, provision for individual differences, achievement tests, and special problems relating to: history, geography, science, music, handicrafts and physical education.

Education 455S Elementary Grade Problems and Methods in Teaching the Blind (2 hours) Miss Abel
MTTHF, 11:30 A. 207

Topics: Oral and silent reading, spelling, language, arithmetic, health, nature study, handicrafts, object teaching and story telling, class projects and programs.

Education 456S Special Techniques and Appliances (2 hours) Miss Abel
MTTHF, 3:30 A. 205

Writing braille by means of the stylus and the braille writer; the use of the Taylor and Brannon arithmetic slates, the Talking Book, square handwriting, braille maps, models and specimens.

Education 462S Directed Observation and Practice Teaching (1 or 2 hours) (1 hour credit is given for twenty 40-minute observation periods and ten 40-minute teaching periods) Dr. Potts, Mr. Dozier and Miss Abel
Daily 7:30-9:30—West Virginia Schools for the Colored Deaf and Blind.

The demonstration and practice school will be in session during the six weeks from June 26 to August 4. It will be preceded from June 13 to June 23 by a daily lecture or discussion period.

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* Two hour credit courses will have five other periods as arranged.

A.—Denotes Administration Building.

THE CONQUEST OF BLINDNESS
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THE
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FOR INSTRUCTORS OF BLIND CHILDREN

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Yearly Subscription $1.00 *Single Copy 20 Cents*

Standard Graduation Examination for Elementary Schools:

Adapted for Use in Schools for the Blind

SAMUEL P. HAYES, PH.D.

COMPLETION OF elementary school work, with graduation from the eighth grade, marks an important milestone in a child's educational progress. How can we be sure that Johnny and Mary have thoroughly covered the elementary school subjects, that they have obtained the fund of information and developed the skills needed for success in the high school? Grade examinations written by the teacher who has taught Johnny and Mary may be discriminating and comprehensive; but they may reflect the educational limitations of the particular textbooks used or the cultural preferences of their teacher. The standard examination is an attempt at the objective measurement of educational attainment based upon the content of many textbooks, with standards obtained through the use of the tests with thousands of pupils.

This article presents an adaptation for use in schools for the blind of the Standard Graduation Examination developed by Dr. Arthur S. Otis and Dr. J. S. Orleans, published in five equivalent forms—A, B, C, D and E—by the World Book Co., Yonkers-on-Hudson, N. Y. Testers should write to the publishers for a specimen set for Form A, which consists of an inkprint copy of the test, a key for scoring, a class record sheet, distribution tables, and a manual of directions. It will be found most convenient to fill in the correct answers in the inkprint test booklet, which may then be used in correcting blind pupils' papers.

In the manual of directions will be found an interesting description of the derivation of this examination—which the present writer summarized in his article in the TEACHERS FORUM for November, 1938 (Vol. XI, page 28)—the directions for the scoring of the tests and the treatment of the results. Directions for giving the tests to blind children make up the body of this article. Tests 1, 3, 6, 7, 8 and 9 are to be given orally to save the time and fatigue involved in extensive tactual reading. The braille materials for tests 2, 4, 5 and 10 of Form A, should be ordered from the American Printing House for the Blind, Louisville, Ky., and the cost may be charged against school quotas. Directions and braille copy for Forms B, C, D and E will be prepared as soon as there is a demand for them.

The main changes involved in adapting these tests for use with the blind are as follows: (1) The multiple choice technique has been substituted for the matching technique in tests 3, 8, and a part of 10, because the matching technique offers special difficulties to tactual readers as explained in the writer's article, "Practical Hints for Testers," published in the TEACHERS FORUM for May, 1939 (Vol. XI, page 88). (2) Six of the tests are to be given orally instead of only one as when used with the seeing. This should somewhat reduce the testing time; it will certainly greatly reduce fatigue and will make it possible to test the pupils' spelling, vocabulary, grammar, language usage, and knowledge of literature and history, whether or not they are proficient in reading. (3) We have omitted certain items in arithmetic computation and in the use of diagrams and maps which do not seem fair to the blind and have divided test 5, "Arithmetic Reasoning," into two parts, printing the odd-numbered items as Part I and the even-numbered items as Part II. Testers may decide whether they can spare the time needed for both parts, or had better give only one of them. We have had no opportunity to determine whether Parts I and II are equal in difficulty. Of course these changes may make it impossible to compare our results with the

norms for the seeing in some of these tests. It is suggested that for the present, until enough schools have reported their results for the establishment of standards for the blind, the 50 percentile norms for the seeing presented on page 9 of the manual of directions be taken as standards for the blind. As the seeing norms for Form A are based on the scores obtained from 23,000 pupils in thirty-five states we have a fairly reliable criterion for comparison. We hope some schools will make a preliminary trial of these tests in their ninth grades this winter to see how well the eighth grade abilities have lasted. This may suggest changes in methods of instruction before giving the tests in the eighth grades next May or June in place of the regular year-end examinations.

TABLE I

Summary of time limits for the Otis-Orleans Standard Graduation Examination

Test number	Test name	Time limits for seeing	Tentative limits for the blind
1	Spelling		Oral (20-25 min.)
2	Reading	20 min.	50-60 min.
3	Vocabulary	5 min.	Oral (10-15 min.)
4	Arithmetic computation (5 problems omitted)	20-25 min.	50-60 min.
5	Arithmetic reasoning	30 min.	Part I (35-45) first day Part II (35-45) second day
6	Grammar	10 min.	Oral (20-30 min.)
7	Language usage	10 min.	Oral (20-30 min.)
8	Literature	15 min.	Oral (35-40 min.)
9	History	20 min.	Oral (50-60 min.)
10	Geography	20 min.	50-60 min.

TABLE II

Suggested plan for a series of eight or nine sittings

	Test	Testing time
a.	Reading	50-60 min.
b.	Spelling and grammar	Oral (20 min. for each)
c.	Arithmetic computation	50-60 min.
d.	Vocabulary and language usage	Oral (30-40 min.)
e.	Arithmetic reasoning Part I	35-45 min.
f.	Arithmetic reasoning Part II (may be omitted)	35-45 min.
g.	Literature	Oral (35-40 min.)
h.	History	Oral (50-60 min.)
i.	Geography	50-60 min.

Directions for giving the Otis-Orleans Standard Graduation Examination for Elementary Schools, Form A

In order to set standards for the blind, it is necessary that these directions be followed *verbatim*. It is strongly recommended that all testers *read* the directions printed in quotation marks to insure uniform procedure. The same directions may be used for Forms B, C, D and E, with slight variations for the different content in tests 2, 3, 7 and 8.

Certain modifications of technique may be desirable to meet local needs, and these variations should be mentioned when reporting results to the writer. For instance, typewriters

may be substituted for braille slates in classes where sufficient facility has been developed and the supply of machines is adequate for the group being tested. Arithmetic slates are employed in some schools more commonly than in others; we have planned to have them used when it is the local custom to do so. In all group-testing we recognize the possibility that differences in ability to read braille may cover up differences in knowledge of the context, and so have recommended oral testing when this accords more nearly with local classroom procedure. However, one must not use the oral method when so many items must be held in memory for comparison and discrimination that mistakes will result from too great stretching of the memory span. We have arranged to have tests 1, 3, 6, 8 and 9, given orally and possibly test 10 might be given orally, though we cannot recommend this without trial.

Test I. Spelling. (Oral)

"Today we are starting a series of interesting tests which will give you a chance to show how much you have learned.

"The first test is a spelling test. Get out your braille slates, put in a sheet of paper and write your name, your birthday, and the present date at the top of the sheet. (If pupils can use typewriters accurately they should be encouraged to do so. Much time will be saved in scoring their work, but care must be used in distinguishing typing errors from spelling errors.) There will be twenty-four words. I shall pronounce a word, then give a sentence in which the word is used, and then say the word again; then you are to write it. Use a new line for each word."

In pronouncing these words and sentences, be sure to speak very distinctly and loudly enough to be heard by all, so that there need be no occasion for repeating a word other than as shown in the list. However, do not suggest the spelling of a word by distorting its pronunciation. For example, in pronouncing such a word as "mental" the tester should be careful to pronounce it as if it were spelled "mentl." Any attempt to give an "a" sound in the second syllable would give undue help

Items for Test I. Spelling

establish	They will *establish* a bank.	establish
ninety	He was *ninety* years old.	ninety
meant	He *meant* to do it.	meant
citizen	He is a *citizen* of the United States.	citizen
regularly	He exercises *regularly*.	regularly
insurance	An *insurance* policy.	insurance
existing	He studied the *existing* conditions.	existing
response	He gave an immediate *response*.	response
probably	He will *probably* be there.	probably
assurance	He gave us his *assurance*.	assurance
original	She was the *original* owner.	original
annual	An *annual* meeting is held.	annual
altogether	It is *altogether* too cold.	altogether
registered	The letter was *registered*.	registered
successful	He is a *successful* business man.	successful
literature	The book is about reading and *literature*.	literature
crocheting	She is *crocheting* a sweater.	crocheting
evidently	He *evidently* enjoyed it.	evidently
cordially	He answered very *cordially*.	cordially
exceptionally	It is *exceptionally* warm.	exceptionally
inconvenience	The rain caused much *inconvenience*.	inconvenience
guaranteed	The watch was *guaranteed*.	guaranteed
accredited	It is an *accredited* high school.	accredited
anniversary	It is their wedding *anniversary*.	anniversary

to the pupils. Take special care to pronounce all the words as naturally as possible. If several teachers are to cooperate in giving this test they should go over the words together beforehand, and decide upon the pronunciations to be used, giving an alternative pronunciation when the children do not seem to recognize a word. When the more difficult sentences are reached, it is well to encourage the children with such expressions as, "Do the very best you can, even if you are not able to spell *all* these words."

When collecting the papers make sure that each pupil has written his name at the top of the sheet. The score on this test is the number of words spelled correctly. Special rules for correcting the test are given on page 5 of the manual of directions.

Test 2. Reading. (50-60 minutes)

"This is a test to show how well you can read braille. I will hand each of you a copy of a pamphlet in which you will find five interesting paragraphs marked A, B, C, D, E, and under each paragraph a set of five questions upon what you have just read. Please do not look into the pamphlet until I tell you to do so. Get out your braille slates (or prepare your typewriters), put in a piece of paper, and write your name and the date at the top of the sheet. Then please fold your hands and keep them folded until I give you the signal to start."

Place one pamphlet on each desk and say: "Now listen carefully and do just what I tell you to do. Do not begin until I say 'GO.' The very second I say 'STOP,' you must stop work and hold up your stylus. After we have begun you *must not* ask any questions. If you drop your stylus, lose your place or need more paper, raise your hand and I will help you. Do your best and do not pay any attention to what anyone else is doing.

"Now open your pamphlets to Test 2, 'Reading,' and find the first paragraph, headed with a capital A. Keep your finger on the capital A while I complete the directions. You are to read this paragraph, consider the five questions under it and write answers to these questions on your braille slates (or typewriters), using as few words as possible. Try to give each answer in a single word if you can. A sample question is answered for you. First write the number of a question and then your answer. Use a new line for each answer. You may re-read the paragraph but should not waste time re-reading any more than is necessary to answer the questions.

"As soon as you have answered the questions on paragraph A, go on to paragraph B, then to C, D and E. I will tell you when to stop work on the test. Does everyone understand?" Allow time for further explanations, if needed, and then say: "Ready—GO." Record the exact time of starting.

At the end of 50 minutes say: "All stop for a minute, as I want to mark your work to show how far you have gone already. Please keep your finger over the last answer you have written to help me find it. Do not read any more until I tell you to do so." Go around with a *red* pencil and underscore the last word written on the braille slates (or typewriters). Allow a brief interval and then say: "Now find the place where you stopped work and wait for a signal to begin again." Then say: "You have 10 minutes more for this test. Go ahead until I say 'STOP.'" At the end of this 10 minutes collect all papers, making sure that each has a pupil's name at the top.

Seeing pupils are allowed 20 minutes for this test. According to our experience the blind require from two and one-half to three times as long for such work. The two scores obtained from the work done in 50 and 60 minutes will make it possible for us to set a standard time for the blind. The score in this test is the number of correct answers recorded by a pupil.

Test 3. Vocabulary. (Oral)

"This is a test of your knowledge of words. Please get out your braille slates (or prepare your typewriters), put in a sheet of paper and write your name and the present date at the top of the sheet." Allow time for this and

then say: "I shall read to you a number of incomplete sentences; each sentence needs one word to make it true. After reading a sentence I will give you a list of five words from which you will select the one which you think is correct. Then you will write the number of the sentence and the word you select to complete the sentence on your slates (or typewriters). Use a new line for each answer.

"Before beginning the test we will try a couple of samples. 'Pretty means——cute, blond, good-looking, intelligent, rich.' (Read the sentence twice.) Now of course the best answer is 'good-looking.' Try another sample. 'To select means to——choose, throw away, postpone, criticize, love.' (Read the sentence twice.) Here the best answer is 'to choose.'

"Now we are ready for the test. I will give the number of a sentence and then read it twice so you will have a good chance to read and remember all I say. You will select the word you prefer to complete the sentence and then write the number of the sentence and the word you prefer on your braille slates (or typewriters). Does everyone understand?"

Read each sentence twice, slowly, being careful not to accent the correct response. If any pupils start writing before the second reading caution them to wait, to avoid confusion.

When collecting the papers be sure that a name appears at the top of each. The score on this test is the number of correct answers recorded by a pupil.

ITEMS FOR TEST 3. VOCABULARY

1.	To navigate means to	steer, float, dive, swim, fly.
2.	Hockey is	a school subject, a city, a game, a man, a book.
3.	Data means	knowledge, information, situation, daddy, instrument.
4.	A candid person is	deceitful, kind, pretty, frank, funny.
5.	To imperil means to	help, fasten, endanger, celebrate, imply.
6.	To envelop is to	write a letter, wrap up, fold, untie, seal.
7.	A battalion is	a battle, a gun, a vegetable, a fort, a group of soldiers.
8.	To absorb is to	take up, soak, heal, dry, eat.
9.	A festivity is a	holiday, game, dance, celebration, parade.
10.	Garlic is a	fruit, meat, vegetable, town in Italy, fish.
11.	Jubilant means	peaceful, joyful, sorrowful, lovely, wonderful.
12.	The word maternity refers to	sisterhood, fatherhood, a monk, motherhood, boys.
13.	To refund means to	take away, begin, repeat, finish, give back.
14.	A lavatory is a	bottle, volcano, washbowl, mountain, faucet.
15.	Perjury means	stealing, bankruptcy, false swearing, crying, profanity.

TEST 4. ARITHMETIC COMPUTATION (50-60 MINUTES)

"Today we have a test to show how well you can do examples in arithmetic. Get out your arithmetic slates and your braille slates (or prepare your typewriters), put in a piece of paper and write your name and the date at the top. I will pass the test pamphlets, but please do not look into them until I tell you to do so." Pass the pamphlets and then say: "In these test pamphlets you will find a series of examples with the number of each example printed before it in parentheses. In the first four examples you will be told what to do—whether to add, subtract, multiply or divide. Reduce all improper fractions to whole numbers and all fractions to their lowest terms. You can probably do some of the examples in your head. Use your arithmetic slates whenever you wish to do so.

"After solving an example write the number of the example and your answer on your braille slates, using a new line for every second example and arranging the answers in two columns on the paper, one down one side and the other down the middle. (If pupils prefer they may use one column and have extra paper.) If you come to an example you cannot do, write the number of the example, leave a blank space and go on to the next one. Does

everyone understand?" Allow time for questions, and then say: "If you drop your stylus, lose your place, or need more paper, raise your hand and I will help you. Ready, GO." Record the exact time of starting. At the end of 50 minutes say: "All stop for a minute, as I want to mark your work to show how far you have gone. Please keep your finger over the last answer you have written to help me find it. Do not read any more until I tell you to do so." Go around with a *red* pencil and underline the last answer on the braille or typed sheets. Then say: "Now find the last example you were working on but wait for a signal to begin again." Allow a brief interval and then say: "You have 10 minutes more. Go ahead until I tell you to stop."

At the end of this 10 minutes say: "All stop," and collect the papers, seeing that each pupil has written his name at the top.

Seeing pupils are allowed 25 minutes for the twenty-five examples given them in this test. We have omitted five of these examples which do not seem fair to the blind and set the time limits at two and a half and three times the twenty minutes which would be allowed seeing pupils for twenty examples.

The score on this test is the number of correct answers reported.

Test 5. Arithmetic Reasoning

(Part I 35-45 min. Part II 35-45 min.)

"Today we are to have a test to show how well you can do problems in arithmetic. Get out your arithmetic slates and your braille slates (or typewriters), put in a piece of paper and write your name and the date at the top. I will pass the test pamphlets, but please do not look into them until I tell you to do so." Pass the pamphlets and then say: "In these pamphlets you will find a series of problems which you are to solve. You are to write the *number* of a problem and your *answer* on your braille slates (or typewriters). Use a new line for each problem. If you come to a problem you cannot solve, write its number, leave a blank space and go on to the next one. You will find that you can do some of these problems in your head, but you are free to use your arithmetic slates whenever you wish to do so. Does everyone understand?" Allow time for questions and they say: "If you drop your stylus, lose your place, or need more paper, raise your hand and I will help you. Ready, GO." Record the exact time of starting.

At the end of 35 minutes say: "All stop for a minute as I want to mark your work to show how far you have gone already. Please keep your finger over the last answer you have written to help me find it. Do not do any more work until I tell you to do so." Go around with a *red* pencil and underscore the last answer written on the braille slates (or typewriters). Allow a brief interval and then say: "Now find the place where you stopped work and wait for a signal to begin. You will have 10 minutes more for this test. Go ahead until I tell you to stop." At the end of these 10 minutes collect all papers, making sure that each one has a pupil's name at the top.

Seeing pupils are allowed 30 minutes for the whole test in arithmetic reasoning and if the blind are to be allowed from two and a half to three times the seeing time allowance a second session for this test would be required, with the easier items the first day and the later, more difficult items at the second sitting. To meet this difficulty, Test 5 has been divided into two parts by printing the odd-numbered items as Part I and the even-numbered items as Part II. If testing time is limited only one part need be given. When a group is assembled for Part II, the same directions should be repeated.

The score on this test is the number of problems answered correctly. If only one part is given this score should be multiplied by two before the results can be compared with the standards for the seeing.

Test 6. Grammar. (Oral)

"Today we are to have a test to show how well you understand English grammar. Please get out your braille slates (or prepare your typewriters), put in a sheet of paper and write your name and the present date at the top

of the sheet." Allow time for this and then say: "I shall read to you a series of numbered questions. You will write the number of the question and your answer on your braille slates (or typewriters). Use a new line for each answer. Let us take a sample sentence. I might say: Which word in the following sentence is a noun? 'The brave boy refused to run away.' The correct answer of course is 'boy,' so you should select that and write it on your slates.

"Now we are ready for the test. I will give the number of a question and then read it twice so you will have a good chance to hear and remember all I say. You will decide upon your answer and then write the number of the question and your answer on your braille slates (or typewriters). Does everyone understand?"

Read each question twice, slowly, being careful not to accent the correct response. If any pupils start writing before the second reading caution them to wait, to avoid confusion.

When collecting the papers be sure that a name appears at the top of each. The score on this test is the number of questions answered correctly.

Items for Test 6. Grammar

1. Which word in the following sentence is a pronoun? *He walks daily in the garden.*
2. Which word is a preposition? *He walks daily in the garden.*
3. Which word is an adverb?
4. Which word is a verb?
5. What is the masculine word corresponding to *mother*?
6. What is the singular of *feet*?
7. The pronoun *they* refers to what person (first, second, third)?
8. What word indicates the nominative case of the pronoun *my*?
9. What is the present tense of *went*?
10. What is the comparative of *large*?
11. What is the present participle of *live*?
12. The expression *in the blue suit* in the following sentence is called a what? *The man in the blue suit is the one who sold our car.*
13. The expression *who sold our car* is called a what?
14. What is the predicate of the sentence: *The roof over the back of the garage leaks*?
15. Which of these sentences is declarative (the first, second, or third)? 1. *Dogs bark.* 2. *Who is he?* 3. *How cold it is!*
16. Which of the five verbs following is a regular verb (declined regularly)? *go, have, see, keep, love.*
17. In the sentence, *He gave her a present,* what word is the direct object of the verb?
18. In the sentence, *The owner of the automobile that was damaged was in a store,* what is the antecedent of *that*?
19. In the sentence, *He brought the book home,* the verb is used in what voice?
20. In the sentence, *She found the purse where she had left it,* the clause is called what kind of a clause? *adjective, noun, adverbial, independent.*

Test 7. Language Usage. (Oral)

"Today we will have an interesting test to show how well you can supply the correct word in a simple sentence. I shall read you a series of numbered sentences each with a missing word or two which I shall indicate by the word 'blank.' You will think what would make the sentence correct and sensible and then write the number of the sentence and your word or words on your braille slates (or typewriters). For instance, I might say 'How—blank—brothers have you?' You would probably say 'many,' for 'How many brothers have you?' makes a sensible question, and you would write 'many' on your slates. Arrange your answers in two columns, one down the side and one down the middle. Does everyone understand?" Allow questions and then have the pupils put paper in their slates and write name and date at the top. When all ready, say: "Now we are ready for the test. Sentence 1. Dan and his brother—blank—going fishing yesterday. (Allow a slight pause before and after 'blank' each time it is used. Read each sentence twice to help the pupils remember it in detail.) Write the number 1 and the word you would supply on your slates (or typewriters), using a new line for each word." Allow a brief time for writing and then give another sentence.

At the end of the twenty-five sentences col-

lect the papers, seeing that a name appears at the top of each. The score on this test is the number of correct answers reported.

Items for Test 7. Language Usage

1. Dan and his brother—blank—going fishing yesterday.
2. Each of the boys—blank—ready this morning with a new fishing rod.
3. Robert—Blank—care so much about fishing as Dan does. Dan likes fishing very much.
4. I had my picture—blank—yesterday. The word begins with 't'.
5. I lay in the hammock all morning. While I was—blank—in the hammock, she called me. The word begins with 'l'.
6. Bill said, "I am going to go." Robert said, "If I—blank—in your place, I would stay at home."
7. Dan asked me to do a favor for him, and I—blank—it.
8. Joe and I are the same age, but he is taller than—blank—.
9. He can beat Ted or—blank—at almost any game we play with him.
10. "Only Ben and I are planning to go," said Dan. "Don't you want to come with Ben and—blank—?"
11. Dick said, "Let's fish in Foster's lake." I asked, "Won't he object to—blank—fishing in his lake?"
12. "Everyone has always fished in that lake whenever—blank—wanted to," said Tom.
13. As I was passing there yesterday, I—blank—him putting up a "No Trespassing" sign.
14. A variety of types of questions—blank—used in this test.
15. "No one but Mr. Jones—blank—self," I answered.
16. The boys hurried down the street, except Jack, who walked very—blank—and was soon far behind the rest.
17. Just then I saw the boys coming. I didn't expect them to have—blank—fish at all, but they had six.
18. Of the two sisters, Mary is by far the —blank—.
19. I can read most books very fast, but not —blank—kind. The word begins with 't'.
20. Mary—blank—going because her mother won't let her.
21. Blank—do you think was talking to Mabel yesterday?
22. Miss Jones, our singing teacher, was absent; so a substitute—blank—us how to sing today.
23. Blank—were you talking with?
24. There—blank—be scarcely any food left when we get there.
25. These books are mine;—blank—books are Dick's.

Test 8. Literature. (Oral)

"Today we are to have a test of your knowledge of literature. Please get out your braille slates (or prepare your typewriters), put in a sheet of paper and write your name and the present date at the top of the sheet." Allow time for this and then say: "I shall read to you a number of incomplete sentences; each sentence needs one word or phrase to make it true. After reading a sentence I shall give you a list of three words or phrases from which you will select the one which you think is correct. Then you will write the number of the sentence and the word or phrase you select on your braille slates (or typewriters). Use a new line for each answer.

"Before beginning the test we will try a sample sentence. 'Goldilocks appears in the same story as—the dwarfs, the bears, Brer Rabbit.' The words necessary to complete the sentence are 'the bears.'

"Now we are ready for the test. I will give the number of a sentence and then read it twice so you will have a good chance to hear and remember all I say. You will select the word or phrase you prefer to complete the sentence and then write the number of the sentence and the word or phrase you prefer on your braille slates (or typewriters). Does everyone understand?"

Read each sentence twice, slowly, being careful not to accent the correct response. If any pupils start writing before the second reading, caution them to wait, to avoid confusion.

When collecting the papers be sure that a name appears at the top of each. The score on this test is the number of correct answers reported.

Items for Test 8. Literature

1. Meg appears in the same story as: Alice, Amy, Eppie.
2. The Rabbit appears in the same story as: The Whale, Penrod, Alice.

3. Huckleberry Finn appears in the same story as: Kim, Tom Sawyer, Hans Brinker.

4. Jim Hawkins appears in the same story as: Long John Silver, Sindbad, Old Hildebrand.

5. Captain Hook appears in the same story as: Captain Kidd, Silas Marner, Peter Pan.

6. Portia appears in the same story as: Macbeth, Ophelia, Antonio.

7. Sam appears in the same story as: Eva, Penrod, Heidi.

8. Silas Marner appears in the same story as: Eppie, Mehitable, Joe.

9. Tiny Tim appears in the same story as: Scrooge, Beth, David Copperfield.

10. Hawkeye appears in the same story as: Old Hildebrand, Uncas, Tom Sawyer.

11. Topsy appears in the same story as: Sam, Eva, Elsie.

12. Robin Hood appears in the same story as: Alan-a-Dale, Lancelot, Sir Walter Raleigh.

13. Merlin appears in the same story as: King Lear, King John, King Arthur.

14. Goliath appears in the same story as: David, Joseph, Moses.

15. Gretel appears in the same story as: Jack and Jill, Ben Hur, Hans Brinker.

16. A story of early pioneer days in the West is: The Last of the Mohicans, Redskin, The Covered Wagon.

17. The story of a man who took care of his sister's children is: Seventeen, Helen's Babies, Now We Are Six.

18. The story of how some shipwrecked people lived on an island until rescued is: Robinson Crusoe, Swiss Family Robinson, The Ancient Mariner.

19. A story of the early days of Christianity in the Roman Empire is: Ben Hur, Abelard and Héloise, Hamlet.

20. A story about a white whale is: Kidnapped, Moby Dick, Captains Courageous.

21. A series of letters from a girl to a man who helped her is: Jane Eyre, The Poor Little Rich Girl, Daddy Long Legs.

22. A story of knighthood in England during the Middle Ages is: Ivanhoe, Oliver Twist, Don Quixote.

23. The adventures of a very wealthy boy and a very poor boy who changed places are found in a book called: Little Lord Fauntleroy, The Prince and the Pauper, Penrod and Sam.

24. The punishment of a man who committed what was considered to be a very serious offense is found in a story called: The Man Without a Country, Hiawatha, Sindbad the Sailor.

25. A play of Italy about a money lender who was punished for his greediness is: Two Gentlemen of Verona, As You Like It, The Merchant of Venice.

The tester will read this note before continuing: In the following ten tests the names from which you select your answer are printed at the *beginning* of each sentence.

26. Hamlet, Ichabod Crane, Jim Hawkins: was frightened by a horseman without a head.

27. Rip Van Winkle, Tony Lumpkin, Long John Silver: had a wooden leg.

28. Harvey Cheyne, Little Lord Fauntleroy, Tiny Tim: was traveling to Europe with his mother when he fell overboard.

29. Scheherazade, Titania, Wendy: was queen of the fairies.

30. Evangeline, Hester, Portia: found her lover dying.

31. John Alden, Governor Endicott, Miles Standish: was too bashful to ask Priscilla himself.

32. Jim Hawkins, Bill Sikes, Silas Marner: murdered his wife.

33. Ali Babi, Scheherazade, Simon Legree: told the stories of the Arabian nights.

34. Old Ironsides, Victory, Oceanic: was a ship famous in American history.

35. Venus, Helen, Delilah: ran away with Paris.

Test 9. History. (Oral)

"Today we will have a test to show how much you know about American history. I shall read to you a series of numbered statements which may be either correct or incorrect. You will listen to a statement, consider whether you agree with it or not and then on your braille slates (or typewriters) you will write the number of the statement and a single letter to indicate your opinion: a 'c' if you think the statement correct, an 'i' if you think it incorrect, or an 'e' for 'either' if you do not know whether it is correct or not. For instance, I might say, 'Andrew Jackson was the second president of the United States.' This, of course, is incorrect so you would write an 'i' to indicate this. If you did not know, you would write an 'e' for either, since the statement might be either correct or incorrect so far as you know. Does everyone understand?"

Allow questions and then say: "Put a sheet

of paper in your braille slates (or typewriters), write your name and the date at the top and be ready for the test." When all are ready say: "Statement Number 1. 'When Columbus returned to Spain from his first voyage to America, he was greeted as the discoverer of a new continent.' Consider whether this is correct or incorrect, or might be either so far as you know, and then on your slates (or typewriters) write number '1' and a 'c' for correct, an 'i' for incorrect, or an 'e' for either, if you do not know. Write your answers across the page, leaving one cell blank after each answer." Allow a brief interval for writing and then give the other statements as printed below. Any statement may be repeated once if desired, but it does not seem necessary to read all the statements twice as has been done in some of the preceding tests. Pupils may be cautioned to give better attention to the first reading if they ask for too many repetitions.

The letters "c," "i" and "e" were chosen in preference to the "t" and "n" used by the seeing to indicate true and not true, because fewer dots are needed in writing these letters in braille. Also, the same number of dots occur in all three of the letters we have chosen so blind pupils can get no help from each other by noticing differences in the sounds of writing on their braille slates.

When the forty-eight statements have been given, collect the papers, making sure that a name appears at the top of each. In scoring this test, count the number of right responses, the number of wrong responses and the number of omissions, making sure that they add up to 48. Then subtract one half of the number wrong from the number right to get the score. This is the customary procedure to nullify the effect of pure guessing when three alternatives are given.

Items for Test 9. History

1. When Columbus returned to Spain from his first voyage to America, he was greeted as the discoverer of a new continent.
2. The settlement at Jamestown almost failed the first year because most of the settlers were unfit for the hardships they met with.
3. The Townshend Acts had to do with taxation and made the colonists more dissatisfied with England.
4. There were about three million persons in the colonies at the beginning of the Revolutionary War.
5. The United States Constitution was finally ratified by all the states except North Carolina and Rhode Island.
6. Lewis and Clark were sent by Jefferson to explore the northern part of the Louisiana Purchase territory and the Pacific Northwest.
7. By 1820 there were more than fifteen states in the Union.
8. When a family "moved West" in the early part of the nineteenth century, it first had to get permission to move and obtain a grant of land from the government.
9. A fast express train today, like the Twentieth Century Limited, travels just about twice as fast as the fastest train traveled in 1830.
10. Jackson, like the preceding six Presidents, was a cultured gentleman who came from a wealthy family.
11. Under the "spoils system," a man who was selected to an executive office discharged many of the less important government employees and gave their jobs to his friends and supporters.
12. At first the Abolitionists were opposed by the people in the North.
13. For a period of several years Congress unconstitutionally denied the right of petition concerning slavery.
14. England's claim to the Oregon Country was stronger than our claim because the Oregon Country had been settled almost entirely by English pioneers.
15. The reason for Perry's visit to Japan in 1853 was to gain some of the trade of that country which was going largely to England and France.
16. Many Germans and Scandinavians came to this country around 1850.
17. Since the earliest days of our country there has existed in every state a system of public schools for all children.
18. There was regular steamship service between America and Europe within five years after Fulton's *Clermont* made the trip from New York to Albany.
19. The invention of the sewing machine in 1846 made it possible to obtain clothing much cheaper than formerly.
20. Cooper was one of the first great American novelists.

21. By 1800 the educational opportunities for women in this country were equal to those for men and most colleges were open to both men and women.

22. Differences of opinion between the North and the South were due largely to a lack of understanding of each part of the country about the other part.

23. The use of slaves in the Northern factories after 1800 would have been very economical and would have become common, but the people of the North were opposed to slavery as being morally wrong.

24. Within a few years after 1849 the population of California increased from about 6,000 to over 50,000.

25. The Compromise of 1850 settled the slavery problem permanently.

26. Kansas and Nebraska were both admitted in 1854 (the date of the Kansas-Nebraska Act)—Kansas as a slave state, Nebraska as a free state.

27. Lincoln was elected in 1860 by a very big popular majority, which showed that the people in all parts of the country wanted to preserve the Union.

28. Until Grant was put in command of the Northern armies, the plans of the Northern generals had been only partly successful.

29. The battle of Gettysburg was Lee's last attempt to stop Grant on his way to Richmond.

30. When the Civil War was over, many of the freed negroes believed that work was the sign of slavery and that the government would support them.

31. The purchase of Alaska has been very well worth while to the United States.

32. The last state was admitted to the Union after 1900.

33. In spite of the fact that most of the Civil War was fought in the South, very little property was destroyed there and the South was fairly wealthy when the war was over.

34. The political parties have always agreed that there should be a high tariff.

35. The purpose of the direct primary is to reduce the power of the political boss in his party.

36. The "initiative" in government is a means by which voters can make laws without the legislature.

37. The first trust was organized in this country during the World War.

38. Samuel Gompers was a notable labor leader.

39. Chinese immigrants have always been welcomed because they work for such small wages.

40. Congress has passed laws limiting the number of immigrants that may enter the country partly because of the large number that have come and failed to become Americanized.

41. The sinking of the *Maine* was the immediate cause of the war with Spain in 1898, although it was not known then whether Spain was at fault.

42. The control of the Philippines by the United States followed upon the victory of the United States in the Spanish-American War.

43. Although at the close of the war in 1898 the United States agreed to the independence of Cuba, the United States has made several attempts to annex the island.

44. Although Canada and the United States have much the same historical background, they have been unfriendly most of the time during the last fifty years.

45. The *Lusitania* was an American battleship that was taking English citizens who had been living in the United States back to England, when it was torpedoed by a German submarine.

46. The number of persons that perished all together as a result of the World War was more than 4,000,000.

47. The Senate supported President Wilson's stand on the League of Nations, but the House of Representatives defeated him.

48. The efficiency of our government is shown by the fact that it has been free from official corruption or scandal since 1920.

Test 10. Geography

"This is a test of your knowledge of geography. You will not need braille slates but will be asked to draw lines through certain words on the test pages with a short pencil which I will give you. Please do not look at the test pages until I tell you to do so." Pass the test pamphlets and short, black lead pencils and say: "In this test you will find a series of sentences each of which needs a word, phrase or sentence to make it true. Following most of the sentences you will find a list of five words, phrases or sentences from which you are to select the correct ones; the last few sentences offer only three choices. When you have decided which will best finish the sentence you are to draw a line through your choice with your pencil.

(*Continued on page 36*)

Dr. Allen Says:

What All Blind Children Should Know About Dr. Howe

Pupils and staff of the Samuel Gridley Howe public school at South Boston had been assembled in it to be told who the man was who bore that name. I said: "He lived here in South Boston, where for many years he was head of Perkins Institution. He liked to ride horseback and was often seen of a morning dashing down Broadway on his coal black charger. After studying medicine he had spent seven years in Greece both as general physician and as surgeon of the Greek fleet, helping its people fight the Turks. It was a wild life. Much of the time he was skirmishing along with guerrilla bands in the mountains, some of the time reduced by hunger to eating sorrel, snails and even roasted wasps, which he declared were not so bad. Whittier tells in *The Hero* how once our warrior, while fleeing on horseback, gave up his saddle to a wounded Greek who galloped off to safety, while he himself had to run for it.

> "'Allah! hu!' Through flashing sabres,
> Through a stormy hail of lead
> The good Thessalian charger
> Up the slope of olives sped."

You would like that poem.

"As a youth 'Sam' Howe was full of pranks. One morning his fellow students at college saw their president's horse looking down from the top of the chapel tower. Howe is said to have got the beast up there.

"Well, having returned from Greece when about thirty he began teaching blind children —something not difficult, but in Boston, new. Presently he succeeded in teaching our language to a child who was not only blind and deaf like Helen Keller, but dumb too. This child was intelligent enough to make her wants known—pulling her mother's dress meant *come,* pushing her, *go,* and pointing to her own mouth, that she was *hungry*. But Dr. Howe, after three long months got her to talk with her fingers and to read the words others spelled into her hand in these letters of the deaf and dumb; something which had always been supposed to be impossible to a child so shut in. Thus one fine morning the girl's teacher woke to find himself a world hero. Charles Dickens came to see him, as did Dom Pedro, then Emperor of Brazil, and many another celebrity. For this education of Laura Bridgman and for his other notable achievements you will find the name of Howe chiseled along with those of Horace Mann and Froebel on the outer wall of the Boston Public Library.

"Laura E. Richards, whose stories many of you must have read, is a daughter of Samuel Gridley and Julia Ward Howe. She and others have written biographies of her remarkable father. I say remarkable, because the Boston of his day could not be properly described with 'Chevalier Howe' left out. He was active in all matters of general interest: in improving the public schools, in starting normal schools, in freeing the negroes from slavery, in the best treatment of people in prison; and he was champion of the feeble-minded and the deaf as well as the blind. All Boston was proud of him. Is it any wonder people have named your school for so great a citizen?

"Dr. Howe was born in Boston in 1801. Every November the Perkins boys and girls still assemble to celebrate the birthday of their great benefactor. Though the present generation of them never knew him personally they know much about him and this they love to tell and to retell."

WHAT OF THE BLIND?

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Price postpaid, $2.00

Spelling

Anna Mahlenbrock

The following quotation in regard to the importance and nature of spelling is taken from Homer B. Reed's book, *Psychology of the Elementary School Subjects*: "Spelling is learned because of its value in written communication. Correct spelling is necessary for conveying the idea intended in any other school subject: is influenced by such factors as, age, intelligence, and language in the home, none of which are controlled by the teacher."

Many studies have been made in the field of spelling, such as the one by Nifenecker on the "Influence of Grade and Age." Also, analytic studies of errors in spelling have been made by Foster, Hollingsworth, O'Shea, Cook, and others. These studies indicate that poor spelling is due primarily to three causes: imperfect vision, imperfect hearing, and false associations. We, as teachers of the blind, are concerned with these three factors in our instruction in spelling. Therefore, I have made a study of spelling in my class which I wish to pass on to other teachers.

We use *The McCall Speller,* which is divided into three books: Primary, Intermediate, and Grammar. Besides the spelling exercises, each book contains a Teachers' Foreword, a Pupils' Introduction and a score card.

In the primary book there are helps to spelling, the alphabet, vowels and consonants, the long and short sounds of the vowels, silent "e", and words of one or more syllables. The lessons are of the phonetic type.

Lesson 1

an	man	can	ran	fan	pan	
any	many		run			sun
is	are	was		were	been	

On the opposite page are Test and Study Exercises, which include aids to spelling and study exercises for a four weeks' period. On other pages are sentences with blanks to be filled in, such as: How ..... did you walk? (far—a word from Lesson 7). On one of the pages the stronger syllables are illustrated, as: belong′, (′) showing the stronger syllable. This is for grade three. At the beginning of this grade the different sounds of the vowels are studied: a—lake, ai—paint, ea—great, ei—eight, ey—they; e—me, ea—each, ee—feel, ei—receive, ey—key, ie—field, i—police; etc. These words contain vowels of like sounds. At the end of the book there is a list of homonyms, an illustrative position of a dictionary, and rules of syllabication.

The second book, which is for the fourth, fifth, and sixth grades, has aids to spelling such as changing the "y" to "i" or "f" to "v" and adding "es" to form the plurals of some words. At the beginning of the fifth grade work there are directions regarding the use of the dictionary. After every fourth lesson there are aids to spelling, study exercises, and dictation reviews consisting of sentences containing the words for the week.

The third book, which is for the seventh and eighth grades, is organized similarly to the second. I believe the exercises included in these books are excellent as drills in typewriting. At the beginning of the work for grade seven there is a list of common suffixes, and at the beginning of the work for grade eight a list of prefixes. In the eighth grade work, after the twenty--eighth lesson, exercises in the pronunciation of words with identical spelling but with the accent on different syllables, such as the words below, are presented—pres′ent, a noun; present′, a verb; prog′ress, a noun; progress′, a verb. At the end of each book there is a list of abbreviations.

Every lesson in spelling is put into braille by the writer. The child reads the word, if possible; otherwise, he sounds the letters. He is asked how many syllables there are in the

(*Continued on page 38*)

The Nature of Creative Activity—A Review

Belle Northrup

The Nature of Creative Activity, Experimental and Comparative Studies of Visual and Non-Visual Sources of Drawing, Painting and Sculpture by means of the Artistic Products of Weak-sighted and Blind Subjects and of the Art of Different Epochs and Cultures, by Viktor Löwenfeld. Harcourt, Brace & Co., New York, 1939, pp. xvii & 272, $4.00.

Professor Löwenfeld has made a contribution of the utmost importance to the psychology of the arts and the field of child creativity in this unusual book which has to do with the art works of the blind and the partially blind who were his pupils at the Hohe Warte Institute for the Blind in Vienna. His conclusions, based upon thousands of examples of plastics and drawings, have an exceptional validity in reference to the nature of creativity by the singular circumstances under which this material was produced; namely, that the work of the blind or partially blind was uninfluenced by visual familiarity with the objective world and also free from any sort of influence that would come from seeing others' ways of working or the works of art which have been produced through the ages. The remarkable line and color drawings and sculptures with which the book abounds spring from the deep native sources within these young artists.

Professor Löwenfeld has arranged his book into three main divisions:

1. The investigation of infantile creativity
2. An analysis of highly developed art work of the partially and totally blind
3. A comparative study of the two basic approaches to art work and their parallel phenomena in various epochs in the history of art.

The work is introduced by a thorough discussion of the physiological and psychological bases which determine the creative ability of the partially blind. The author, distinguishing clearly between physiological and psychic weak-sightedness, writes: "The want of sight, or better the non-observance of visual impressions does not cause inhibitions; on the contrary, in certain cases, this lack can accentuate creative activity."

Into the scheme of infantile drawing he reads a new definition based on the various stages of art work from rhythmic expressions represented by the so-called "scribbling stage" up to the conscious production of definite forms and composition. With sound psychological insight the author explains the development of spatial concepts in children's art and points out that the symbolic manner in which children represent space is quite independent of visual conceptions. He holds there are universal laws which govern representation of space and time in drawings of children and primitive peoples. Moreover, he makes the very interesting point that many miscalled blunders and disproportions in infantile drawings are subject also to certain laws, and that they give deep insight into the child's psyche by which he is linked to the primitive of any period or epoch.

Then follows a logical explanation of the real meaning, the function, of exaggeration. The relationship of these exaggerated forms to acute bodily sensations and intensely felt muscular response to which the blind resort as a source of plastic expressiveness, is convincingly portrayed by means of illustrations. In like manner the use of color by the partially blind who can scarcely discern form or even penetrate color sequences, is described as based on a heightened response to kinesthetic feeling rather than harmonious sequences or appearance notations, as the older seeing type is apt to use it.

With so interesting and comprehensive a

body of material to draw upon, the author does not stop at the products of these gifted children but makes definite assumptions on the attitudes which provoke art works. Professor Löwenfeld's theory, one might say his unique contribution, is that common to all—seeing and non-seeing—there is a visual and a non-visual or "haptic" determination to creativity; that is to say, the visual attitude toward representation of form exists in the congenitally blind and in the weak-sighted as well as in the person of normal vision. Among these three groups there are people who automatically represent things in their natural configuration regularly, as they would be seen or conceived of by touch. The non-visual type—again, the totally blind, the partial-sighted or the normal-sighted—has a need to express forms in terms of feeling; in a word, not as objective presentations but as subjective ones, as meanings not appearances. If he takes for his subject another person, he depicts qualities that he feels rather than a likeness. That he is able to transform these feelings into form and design is, of course, the unaccountable process which makes for an artist and suggests the difference between a "picture" and a work of art.

After working with these many and varied, and, undoubtedly, responsive pupils, Professor Löwenfeld has concluded that products of creative experience do not depend upon physiological conditions, on either derangement or loss of sight or on normal vision, but are determined by psychological disposition. This, naturally, has significance for the normal-sighted who are urged too often in our schools to compete with the facile visual-minded student whose way of working is held to be the legitimate one because it looks right and is not distorted or strange. Accordingly, such work as Professor Löwenfeld's not only opens the doors to the blind for participating richly and meaningfully in one of the most fundamental of human experiences, that of individual expressiveness; but through the pure plastic expression of the blind, he is able to extend encouragement to the efforts of the "haptic" normal-sighted who paradoxically have been handicapped by not being "visual" minded.

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"Open your pamphlets and find the sample statement at the beginning. This reads: 'The capital of France is—Versailles—Marseilles—Vienna—Paris—Bordeaux.' The correct answer of course is 'Paris' so you should draw a line through that name. Do not go on with the test until I give you the signal. Does everyone understand?" Allow questions and then say: "Now we are ready to begin the test. Do not start till I say GO, and the very second I say STOP, you must stop. After we have begun you must not ask any questions. If you drop your pencil, or lose your place, raise your hand and I will help you. If you come to a sentence you cannot do, skip it and go on to the next. Ready, GO."

At the end of 50 minutes say: "All stop for a minute as I want to mark your work to show how far you have gone. Please keep your finger on the last thing you have marked to help me find it. Do not read any more until I tell you to do so." Go around with a *red* pencil and encircle the last word marked by each pupil. Then say: "Find the last sentence you worked on and wait for the signal to go on." Allow a brief interval for finding the place and then say: "You have 10 minutes more for this test. Ready, GO."

At the end of this 10 minutes collect the pamphlets, writing each pupil's name at the top of the page he has been working on.

Seeing pupils are allowed 20 minutes for this test so we have arranged for the blind to have two and a half and three times as long, making it possible for us to collect data at 50 and 60 minutes. The score in this test is the number of correct responses.

DIRECTORY OF PERIODICALS
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Our Bookshelf

KATHRYN E. MAXFIELD, PH.D.

IN these days of high tension young people have great need of guidance in learning to recognize the difference between pernicious and legitimate propaganda, between actual thinking and slogan-thinking. Can your pupils, for instance, or can you yourself, look critically at words like *capitalism, war, peace, neutrality,* and calmly study their actual meanings instead of reacting without thought to their current catch-word use? Can your pupils, and do they, recognize claptrap when they encounter it in an article with whose general sentiments they agree?

The first step in teaching young people how to think lies in the constant discipline of his own mind by the teacher. Such self-imposed training keeps the teacher reminded of the need for qualifying his own thinking, gives him greater respect for the product of true mental activity on the part of his pupils, and indirectly arouses in those pupils an appreciation of him as a student because of the care with which he himself recognizes specious arguments.

Discussion groups can be intellectually stimulating to both teachers and pupils and it is worth the effort to make them so.

Last summer an article appeared in the August 4th issue of *Science* which could provide the basis for a lively discussion in any teachers' meeting since it deals with this problem of developing educators and pupils who know how to evaluate facts and opinions and who actually take the trouble to do so. The paper was originally presented before the American Society of Plant Physiologists and is meant primarily for scientists. However, teachers of all subjects will find it well worth reading. The article is called, "Education by Authority or for Authority? Are Science Teachers Teaching Science?" and was written by Professor Otis F. Curtis of Cornell University. *Science,* Vol. 90, No. 2327, 1939, pp. 93-101. Price 15 cents. Science Press, Grand Central Terminal, New York, N. Y.)

His thesis is indicated by the closing sentences: "Are we as individuals growing, or are we static? In all fields of education, whether it be art, music, literature, religion, sociology, history, government, economics, or one of the sciences, we need education for appreciation not by dictation, for understanding not by indoctrination, for authority not by authority."

Today, all of us, both educators and students, have particular need for careful thinking in regard to propaganda in the field of international relations. Teachers will find help in regard to source material to be used as a basis for discussions in a recent publication of the Research Division of the National Education Association called, "Organizations Interested in International Relations." (Vol. XVII, No. 4, Sept. 1939. Single copies, 25 cents; 2 to 9 copies, 10% reduction. National Education Association, 1201 Sixteenth Street, N. W., Washington, D. C.)

This pamphlet contains descriptive statements of activities of 174 organizations which provide services and materials of interest to students and teachers. The range of organizations listed is surprising,—from the Association for Childhood Education to the American Society of International Law, from the Boy Scouts of America to the Pan-American Sanitary Bureau, from American Youth Hostels to the Biosophical Institute. One organization which has material of special interest to high school teachers is the Institute for Propaganda Analysis, Inc., 132 Morningside Drive, New York, N. Y. Requests for information should be addressed to Dr. Clyde R. Miller, Secretary.

Forgetting the world at large for a moment, and limiting ourselves to our own general field, that of exceptional children, we want

to call attention to an annotated bibliography called, "Selected References from the Literature on Exceptional Children," by Dr. Gertrude Hildreth and Dr. Christine P. Ingram. (*Elementary School Journal,* Vol. XXXIX, No. 9, May 1939, pp. 692-708. Single copies, 30 cents).

References are given on each of the following: (1) subnormal and backward children, (2) behavior and problem cases, (3) juvenile delinquency, (4) superior and gifted children, (5) blind and partially-seeing children, (6) crippled children, (7) deaf and hard of hearing, (8) delicate children, (9) speech defectives, and (10) general references. Since teachers of the visually handicapped are also unavoidably teachers of children manifesting many other exceptional characteristics, it is always stimulating to read books or articles in these allied fields.

In teaching children how to think, whether in terms of international relations or in terms of the realization that a science is more than the sum of its techniques, objective material which can be actually used in the classroom is of fundamental importance. Dr. Mary Dabney Davis gives a helpful list of such material in the February, 1939 issue of *School Life.* Other headings under which the materials are grouped are health and hygiene, international understanding, and natural science. She lists both private and government sources.

Does your school library subscribe to that little but enlightening magazine, *Understanding the Child: A Magazine for Teachers?* Its editor, Henry B. Elkind, M.D., is admirably carrying out the purpose of the publication, which is to guide classroom teachers in understanding and dealing with problems of poor mental health arising in the school. Priced at only fifty cents a year, or a dollar for three years, it is published by the National Committee for Mental Hygiene, 50 West 50th Street, New York, N. Y. Nowhere can one find better concrete suggestions or find them more sanely presented. Not that we always agree with points of view that are expressed, but it would be an unhappy event to find a magazine with which one was always in complete agreement.

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word and where the accent is. If he does not know, he is helped by the teacher. His attention is drawn to different parts of the word, the silent letters, and the sounds of the vowels.

I believe that the blind child should know how to use in sentences the words which he learns to spell. Some studies have been made with seeing children to determine whether using words in sentences or using them alone is preferable in learning to spell. These studies showed that giving the word alone is better. I believe, however, that in the case of a blind child it is better to use the word in a sentence to bring out the meaning and the usage of the word. It helps him in his reading as well as in writing and spelling. The children in my class when reading will say, 'Miss M....., that is one of my spelling words." I believe that phonetics is one of the best aids to a blind child. He hears the sounds of the different vowels and combinations of sounds and makes use of them not only in spelling but in reading.

After the child has read the spelling words with the aid of the teacher, he copies them on a braille slate, at least in the lower grades. The teacher looks over the papers and makes corrections. The older children write their spelling words on the typewriter. In this way the children get practice both in writing braille and in typewriting. Some of the older children, those who know how to write sentences, write the words in sentences. This seems to be helpful to children of foreign parentage and those from homes where poor English is spoken.

I believe the children should have a great deal of oral work in spelling to help them in their everyday speech. Great care should be taken by the teacher in the pronunciation of words and also with the intonation of the voice, as children like to hear a clear, pleasant voice. Of course, not all this work is done in

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A Tuberculosis Survey in a School for the Blind

CAMILLE KERESZTURI, M.D.

DURING the past seventy years, the death rate from tuberculosis in New York City has declined from more than 400 per 100,000 population in 1870, to about 50 per 100,000 in 1938. Since no specific treatment for tuberculosis was discovered during this period, the decline in the death rate may be attributed to such factors as (1) health education and better understanding of the nature of the disease; (2) early diagnosis with consequent early treatment; and (3) more rapid removal of infectious cases.

In dealing with the tuberculosis problem among the school population these three factors are employed, the steps being as follows:

1. Giving a series of lectures on tuberculosis to pupils, parents and teachers in which the co-operation of these groups is won through their better understanding of the nature of the disease and the value of a program for its control.
2. Tuberculin testing of all pupils and teachers to determine positive and negative reactions to the disease. On the average 35 to 50 per cent of those tested will show positive reactions.
3. Chest roentgenograms (X-ray examinations) of those who show a positive reaction to the tuberculin test. About 5 per cent of the tuberculin positive group (1.5 per cent of the total group tested) will show in the roentgenograms shadows which suggest fresh or active infection.
4. Intensive clinical studies and appropriate treatment of those whose roentgenograms suggest infection which requires attention.

Following this plan, a tuberculosis survey was conducted by the writer over a two-year period in the New York Institute for the Education of the Blind. The findings were as follows:

The ages of the pupils ranged from five years and six months to twenty-two years. Ten per cent of the pupils were colored. In 1937 we found that of the 198 pupils tested, 34 per cent reacted positively to the tuberculin test. Of the positive reactors 22 per cent showed X-ray evidence of tuberculosis in the chest. However, only four per cent of the positive reactors or one and a half per cent of the entire group showed X-ray lesions in the lungs which seemed to have clinical significance. None of the pupils had a positive sputum. In 1939, or two years later, only 168 of the formerly tested pupils were still in school. Nine of these had become infected during this period. However, the infection must have been mild, as no X-ray evidence of the disease could be found. Therefore, we can state that the infection rate was 2.7 per cent per year but that the infections were subclinical.

In 1937, 34 per cent of the total of 198 pupils reacted positively to the intradermal tuberculin test, whereas in 1939 only 29 per cent of 219 did so. Therefore, we can say that if we assume that this difference is of statistical significance, there is a decreasing trend in the incidence of tuberculosis infection in the New York Institute for the Education of the Blind. If we should compare the incidence of tuberculosis infection, not within a two-year period but in years further apart, we would see undoubtedly a greater decrease in the percentage of positive reactors. Meyers and Stewart, for instance, tested school children in certain grades in Minnesota in 1926 and found 47 per cent to be positive reactors. In 1936, or ten years later, they tested children in the same grades and found only 18 per cent positive reactors. A similar decrease was observed in the United States as a whole.

As no specific therapy of tuberculosis was discovered in the interim, the decrease must be due to better health education, earlier diagnosis, increased resistance of the population

to tuberculosis, earlier and more modern treatment or more prompt removal of the infectious cases. The incidence of abnormal X-ray shadows suggesting clinical disease in our tuberculin positive group in 1937 was four per cent, whereas in 1939 it was only one and a half per cent. It is true that we dealt with only about 200 cases; therefore, the decrease in the incidence of infection and abnormality in the chest roentgenograms suggesting clinical disease between 1937 and 1939 cannot be called statistically significant. However, the uniform trend in all three phases of tuberculosis mentioned, gives one the impression that some progress has been made through our efforts during the last two years.

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a day. It takes about three or four days according to the child's needs. At the end of the week the children are given a written test. After the papers are corrected the teacher points out the errors, and the misspelled words are written correctly three times. The teacher keeps an account of the misspelled words and includes them as extra words in the next week's test. This is done until the word is mastered.

The Teachers Forum

for

Instructors of Blind Children

Address all communications to

P. C. Potts, Ph.D., *Editor*

American Foundation for the Blind

15 west 16th street

new york, new york

The Editor will not be responsible for opinions expressed in signed articles

NOVEMBER, 1939

We have been greatly interested in the adaptation of measuring instruments for use at different stages of the child's educational development. There were already available the New Stanford Achievement Tests, for grades four through nine; and the Unit Scales of Attainment, for grades five and six. In this issue we are presenting an adaptation of the Otis-Orleans Standard Graduation Examination for Elementary Schools. This gives a choice of good testing devices for grades five through eight. A further revision of the Sones-Harry High School Achievement Test has been commenced and should be completed during this school year. We trust that, thereafter, many of our schools will use these tests in order to: (1) compare the work done by their pupils with that done in other schools for the blind and in public schools, (2) compare the work done during any given year with that done in previous years, and (3) compare the work done in various subjects and arrange for such re-emphasis or re-grading as may be indicated. Dr. Hayes, in particular, has devoted much time and toil to this matter and teachers should take full advantage of his labors and achievements.

Our Contributors

Dr. Samuel P. Hayes is Professor of Psychology at Mt. Holyoke College.

Dr. Edward E. Allen, who is in demand as a speaker on any subject relating to the blind, gives us this month an informal talk about Dr. Samuel G. Howe.

Miss Belle Northrup is Assistant Professor of Fine Arts at Teachers College, Columbia University, and Viktor Löwenfeld, whose book she has reviewed, is now Professor of Arts and Crafts, Hampton Institute, Hampton, Virginia.

Anna Mahlenbrock is the teacher of the special class for the blind in the A. Harry Moore School, Jersey City, N. J.

Dr. Kathryn E. Maxfield is Director of the Research Council for Blind Children, 116 East 60th Street, New York, N. Y.

Dr. Camille Kereszturi, a New York physician, presents results of a survey of the pupils at the New York Institute for the Education of the Blind.

THE Teachers Forum

FOR INSTRUCTORS OF BLIND CHILDREN

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A Study of the Size and Space Concepts of Blind School Children Compared With Those of Seeing School Children

Elizabeth Hall

One of the many responsibilities of teachers of the blind has been to give to their pupils knowledge of their surroundings which the students could not acquire by themselves because of their restricted sensory experience. Much of such knowledge, which includes important factors in the size and space concepts of the average person, must be gained through special techniques. Teachers can also devise means by which they may assist students to obtain for themselves some of these concepts which are ordinarily derived through vision. If the extent and accuracy of the resulting organized knowledge can be measured by present-day standardized test procedures, some idea of the effectiveness of this instruction will be available.

The purpose of this study is to investigate the effect of greatly impaired vision on the accuracy of size and space concepts by comparing scores made by children in two schools for the blind with those of a comparable group of public school children, using an objective test devised for this purpose.

In general, psychological literature pictures the space judgment of the blind as developing empirically through the available space modalities—tactual, kinaesthetic, and auditory. It seems reasonable to assume that the results of these kinds of primary experience plus the integrated results of secondary or vicarious experience might be measured.

The test prepared for this investigation consisted of eight sections as follows:

Section A. General orientation, grasp of compass directions, and left-right relationships.

Example: "If south were to your right, in what direction would you be facing?"

Section B. Size of familiar objects, in which judgments were indicated by comparisons with other objects, with the individual's own body or in units of linear measure, as the subject preferred.

Examples: "How large is a cow?"
"How tall is a six-year-old boy?"
"How wide is your bedroom door?"

Section C. Estimates of distances in conventional units of linear measure.

Examples: "How many feet long is this room?"
"How many inches high is the table from which you eat, at at home?"

Section D. Size of common objects in comparison, through choice, with other specified objects.

Examples: "Are apples about the same size as watermelons, oranges, or lemons?"
"Are most ears of corn as long as the width of a plate, length of a platter, or width of a saucer?"

Section E. Similar to D, but in terms of specified linear units.

Examples: "Is the door of the bedroom where you sleep twenty inches wide, thirty inches wide, or forty inches wide?"
"Are apple trees usually thirty feet high, sixty feet high, or ninety feet high?"

Section F. Relative sizes of objects, indicated by arranging groups of four in order according to size.

Examples: "Elephant, cow, dog, whale."
"Sparrow, rooster, hummingbird, turkey."
"Pear, apricot, muskmelon, strawberry."

Section G. Record of the length of each individual's hand and foot, to be used in checking estimates.

Section H. Two parts—H 1, in which sizes of objects were indicated by estimates marked or folded on a strip of paper; H 2, verbal estimates in inches (same items). H 1, with the estimates indicated by marks, was not used in scoring due to the identity of objects in H 1 and H 2.

Examples: "How long is a match?"
"How wide is a fifty-cent piece?"
"How long is a teaspoon?"

One hundred sixty-six public school children in the fifth, sixth, seventh and eighth grades were tested, and fifty-three children in the same grades in schools for the blind.

Thorndike's Word List was the primary source from which the names of objects in frequent use were chosen for inclusion in the test. This was supplemented by words involving space and size relationships appearing in readers used both in instructing the seeing and the blind. Sections A, D, E and F were combined into a single test and called Test 1. The reliability, obtained by correlating alternate items, was .54. Another score was derived from the results of Sections C and H 2; this was called Test 2 and its reliability, obtained by correlating alternate items, was .767. These two tests indicate the average percent of error in each individual's estimates of the various dimensions studied.

A preliminary scoring of Sections A, D, E and F was made on all the papers prepared by students in schools for the blind, in order to determine whether such students should all be classed together as one group, or whether they should be divided into totally blind and partially blind groups. The scores of these two groups proved to be very close, the mean scores of the totally blind being slightly higher on three of the four sections, and the critical ratios all being so small that the differences in the means may be considered insignificant. In these calculations the students from both schools for the blind were considered together, those no more than barely able to perceive light being classified as totally blind.

The conclusions from this study and the chief bases for them may be summarized as follows:

1. Test I discloses no characteristic differ-

TABLE I

Showing the Means and Sigmas of the Totally and Partially Blind Groups on Sections A, D, E, and F
T—Totally Blind; P—Partially Blind

Section	Number	Group	Total Possible Score	Mean Score	Sigma	Critical Ratio
A	18	T	8	6.7	1.60	
A	35	P	8	6.9	1.40	.47
D	18	T	10	7.0	1.76	
D	35	P	10	6.9	1.61	−.20
E	18	T	9	7.1	1.13	
E	35	P	9	6.9	1.53	−.54
F	18	T	22	17.2	2.65	
F	35	P	22	17.1	3.61	−.11

After this study it was decided that in comparison with the seeing the totally and partially blind students should be treated together, as one group.

ences in score between blind and seeing children in the same grades.

Table II shows the close similarity of mean scores grade by grade. The small critical ratios indicate that the differences between the blind and the seeing are not statistically significant, a critical ratio of 3 being taken as the criterion.

Judgments of space and size sampled in this test appeared to be quite specific. Low intercorrelations between the various sections, ranging from .12 to .48, and the low reliability of .54 of the test as a whole, are evidences of this fact.

2. The ability to estimate dimensions in linear units as sampled by Test 2 increases in each grade in the public school group, the improvement being greatest from the fifth to the seventh grade. In the schools for the blind we find no such improvement. In the

TABLE IIa

Showing Means and Sigmas by Grades of Seeing and Blind Students on Test I (A, D, E, F)

Grade	School	Number	Mean Score	Sigma	Critical Ratio
5	Public	23	34.1	6.08	
5	Blind	14	35.9	6.24	.86
6	Public	58	38.1	4.84	
6	Blind	13	38.6	4.26	.37
7	Public	24	40.6	3.66	
7	Blind	10	40.1	3.46	−.38
8	Public	34	40.8	3.74	
8	Blind	15	39.5	5.06	−.89

This comparison shows no general superiority of seeing students in the kinds of knowledge sampled by the questions in Test 1. Their average mean score was 38.39. The average mean score of the blind was 38.53. The blind are slightly more variable, with an average sigma of 4.76. The average sigma of the seeing children was 4.58.

TABLE IIb

Showing the Increases in Scores from Grade to Grade, in Test I, by Blind Pupils

Grade	Number	Mean Score	Sigma (Mean)	Diff. of Means	Sigma (Diff.)	Critical Ratio
5	14	35.9	1.67			
6	13	38.6	1.15	2.70	2.03	1.33
6	13	38.6	1.15			
7	10	40.1	1.09	1.50	1.58	.95
7	10	40.1	1.09			
8	15	39.5	1.31	−.60	1.70	−.35
5	14	35.9	1.67			
7	10	40.1	1.09	4.20	1.99	2.11
5	14	35.9	1.67			
8	15	39.5	1.31	3.60	2.12	1.69

This table shows that the growth in spatial ideas from grade to grade is very slight, the yearly comparisons giving very low critical ratios. Even the growth from the lowest score (grade 5) to the highest (grade 7) does not approximate the criterion of a critical ratio of 3. With the seeing the critical ratios are all higher, and the growth for two or three years is highly significant. This appears in Table IIc following.

TABLE IIc

Showing the Increases in Scores from Grade to Grade, in Test I, by Seeing Pupils

Grade	Number	Mean Score	Sigma (Mean)	Diff. of Means	Sigma (Diff.)	Critical Ratio
5	23	34.1	1.27			
6	58	38.1	.63	4.	1.42	2.82
6	58	38.1	.63			
7	24	40.6	.75	2.50	.98	2.55
7	24	40.6	.75			
8	34	40.8	.64	.20	.99	.20
5	23	34.1	1.27			
7	24	40.6	.75	6.50	1.48	4.39
5	23	34.1	1.27			
8	34	40.8	.64	6.70	1.42	4.78

TABLE IIIa

Showing Means and Sigmas, By Grade, of Seeing and Blind Students on Test 2, Computed from Scores in Terms of Average Percent of Error When Estimating Size and Distance in Conventional Units of Measurement

Grade	School	Number	Mean Percent of Error	Sigma	Critical Ratio
5	Public	23	34.3%	16.41	
5	Blind	14	22.3	4.27	−3.32
6	Public	58	26.1	11.09	
6	Blind	13	22.5	8.10	−1.35
7	Public	24	20.	7.29	
7	Blind	10	23.8	8.86	1.19
8	Public	34	18.5	5.51	
8	Blind	15	23.3	15.84	1.14

TABLE IIIb

Showing the Increases in Scores from Grade to Grade in Test 2, by Seeing Pupils

Grade	Number	Mean Score	Sigma (Mean)	Diff. of Means	Sigma (Diff.)	Critical Ratio
5	23	34.3%	3.42			
6	58	26.1	1.46	−8.20	3.72	−2.24
6	58	26.1	1.46			
7	24	20.	1.49	−6.10	2.09	−2.92
7	24	20.	1.49			
8	34	18.5	.95	−1.50	1.77	− .85
5	23	34.3	3.42			
7	24	20.	1.49	−14.3	3.73	−3.83
5	23	34.3	3.42			
8	34	18.5	.95	−15.8	3.55	−4.45

fifth grade the blind children markedly excel the public school children as indicated by a critical ratio over 3; in the sixth grade they are superior, and in the seventh grade they are inferior by a slight but statistically unreliable margin; in the eighth grade the public school children are again superior, but the difference is not significant because of the large standard deviation of the blind group.

Both groups vary greatly in homogeneity of performance, as shown by changes in the standard deviations of the scores made by each grade. In the fifth grade the children in schools for the blind are much more homogeneous as indicated by the small standard deviation of 4.27, as well as more capable, as indicated by the low percent of error. In the eighth grade this relationship is completely reversed. This change has come about gradually, grade by grade.

3. In marking off on paper the dimensions of familiar small objects, (test items H 1) children in schools for the blind do as well as public school children, even surpassing them slightly in the fifth grade.

4. Section F (arrangement according to size) included data showing the amount of concrete experience with the materials used. This correlated r=.54 for the public school children and r=.47 for children in schools for the blind, with the scores on this section. In view of the low reliability of the test, the correlation of experience with accuracy would be nearly perfect, if corrected for attenuation.

5. Blind children used linear measure in preference to other objects or body dimensions, as a means of designating size in answering questions of Section B, the preference ranging, for different grades, from 65% to 87%.

The number of times linear measure was used was not closely related to accuracy in estimation (r=.33 for the seeing group; r=.16 for the blind group). Thus the habit of depending on linear measure is only slightly justified by superior precision in using it.

6. The scores on Test 1 showed correlations to scores on Test 2 of r=.57 for the seeing group, and r=.31 for the blind group. The estimated true correlation between Tests 1 and 2 is .90.

The scores on Test 1 showed a correlation to group test intelligence quotients of r=.43. Intelligence quotients were available for 104 public school students on the Otis Self-Administering Tests of Mental Ability. The correlation of Test 2 with intelligence is negligible, being only r=.03.

Grasp of arithmetic fundamentals was more closely related to Test 1 than to Test 2, as indicated by a correlation of r=.47 for the former and r=.27 for the latter. Skill with arithmetic problems shows an opposite relationship, the correlation with Test 2 (r=.34) being higher than the correlation with Test 1 (r=.18). The Metropolitan Achievement Test had been given to thirty-one eighth grade pupils in the public school group and their scores on "arithmetic fundamentals" and "arithmetic problems" were used in these correlations.

7. It is apparent that knowledge of the size aspects of those objects used in Test 1 can develop, in relation to each other, without vision. This study gave no check, however, on the amount of additional emphasis and instruction on these concepts given by families and teachers of children in schools for the blind. Table II shows an upward trend in grades 5, 6 and 7 for the blind as well as for the seeing. The reversal of the general position of the blind and the seeing shown in Test 2 may be due to early emphasis in the case of children in schools for the blind, and to a later growth, through experience, in the case of public school children.

A check was made of age at the nearest birthday at the time of taking the test and the average age of the students in schools for the blind was found to be one and one-half years greater than that of the public school students in the same grades. A comparison was then made of the scores of blind

and seeing children equated by age. There were no significant results, though this may be partly due to the fact that the groups were very poorly matched for this type of comparison. The primary purpose of this investigation being to compare blind and seeing students of the same academic level in a specific function of learning, it is felt that the tests have accomplished their main purpose.

This article is a condensed adaptation of a thesis submitted by Elizabeth Hall to the Department of Psychology and the Graduate Faculty of the University of Oregon in partial fulfillment of the requirements for the degree of Master of Arts, May, 1938.

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Paper for braille shorthand machines may be purchased from the Ribbon and Ticker Paper Co., 200 Railroad Ave., Paterson, N. J., at $2.50 for 25 rolls, $4.50 for 50 rolls and $8.50 for 100 rolls, f.o.b. Paterson. Twenty-four rolls is the smallest number that could be made up at one time.

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Personality Development Through a Social Program at the Virginia School for the Blind

Dorothy O. Post

In the complex world of the present day the word *personality* is constantly growing in usage. Many definitions of the word have been proposed by educators and scientists, but it is generally agreed that no single one has yet been formulated which includes all of its potentialities. J. B. Watson in his book, *Behaviorism,* concludes his definition with the statement that "personality is but the end product of our habit systems." In *The Human Mind,* Dr. Karl A. Menninger says that "personality means all that anyone is and all that he is trying to become," thus giving to this important human development the significance of an ideal.

While it is now recognized that the personality development of an individual may be influenced by parents and teachers, it has been difficult to devise general educational methods which can be adapted to character differences. Dr. Sadie Myers Shellow in her book, *How to Develop Your Personality,* classifies the traits included in personality as appearance, expression, intelligence, interests, emotions, and social adaptation. The accepted goals of school and home training would seem to include the development of the first five traits, but educational trends have been slow in emphasizing the importance of social adaptation. By their very nature educational practices tend toward a group approach to problems, but development of successful human relations leads inward to the individual rather than outward to the group. Thus, in any school, group activities should be so planned as to assume responsibility for the social adjustment of the individuals within the group. However, because of the group nature of the ordinary social program, school authorities tend to accept group effort as a whole, while there may be many individuals within the group who feel keenly their inadequacy, and who fail to make acceptable adjustments.

In the schools for the blind those who administer the social program have an even greater responsibility; in accepting group efforts they cannot ignore the failures of individuals, because the approach of the visually handicapped child to the group is very different from that of the public school pupil. The blind child is denied the measuring rod of sight with which to compare himself with his fellows. The confusion of sounds in any group causes the blind child to be unsure of himself and to fear for his safety. All children tend toward self-consciousness when passing through the trying period of adolescence, but the blind child often takes refuge in seclusiveness, becoming so retiring that in group efforts he makes an unhappy situation for himself as well as his associates. His feeling of inadequacy may cause him to make a spectacle of himself by noisy talk or other means designed to attract attention. The praise which he receives for achievements accomplished despite his handicap sometimes leads to his failure to recognize situations which he has met less successfully.

These peculiarities and differences of the visually handicapped child make individual guidance in recreation imperative. Lack of participation in normal social activities in the home, an unwillingness to attempt the new and untried, a feeling of inferiority, plus an inability to see, imitate, and compare himself with his fellows, are all factors that must be considered in the adjustment of each individual to the group. The residential school, for example, is the child's home, and in addaddition to providing a well-rounded educational program, it is its duty to surround

each pupil with the understanding and sympathy found in the normal social pattern of a home. Demonstration programs and group contacts with organizations have their place in the life of the school, but they cannot be considered as sufficient for personality development. In serving the dual function of school and home, the social plan must provide contacts with persons and groups outside the school which will allow for actual participation by the individual, regardless of handicap.

Professor Betts, in his *Foundations of Character and Personality,* classifies social adjustments as those of "person to person; person to group; group to person; and group to group." At the Virginia School for the Blind the sponsors of the social program recognize this classification in their study of the needs of the individuals under their guidance; it is their aim to assist each pupil toward a personality development socially acceptable by the group. School units of national organizations, such as the Y. M. C. A., the Y. W. C. A., and the Girl Reserves, have assumed leadership in the social program of the school. Outstanding members who, through adequate adjustment, prove themselves eligible to represent the group, are chosen to attend regional conferences, and through these establish contacts outside the school. The Girl Reserves, for example, attend the annual Southwest Virginia Conference of their organization, and participate by leading discussions, presenting one of the programs, and attending the sessions along with other delegations. The Y. M. C. A. takes part in the Annual Conference of Virginia Preparatory Schools, sharing the social activities with other groups at the dances, banquets, and teas.

This development of a comradely fellowship between the Virginia School for the Blind and nearby schools and colleges, has been especially emphasized. Thus, the Mary Baldwin College Y. W. C. A. Cabinet acts as Woman's Council for the Girl Reserves, and has brought about a mutual exchange of assistance between the two organizations. During the year the Girl Reserves frequently arrange for the music at Mary Baldwin College parties; they usually present plays at Christmas and at Easter; and an annual tea is given to honor the girls who have shown an interest in the organization. These activities are planned at a yearly dinner meeting attended by students from the two schools. This program is designed to include many features for the individual as well as the group; the Mary Baldwin College girls arrange to help the Girl Reserve members with their hobbies; they assist groups with projects in nature study, dramatics and dancing; and they arrange for weekly visits to the school for play hours with the Sunbeams, an organization of younger girls sponsored by the Girl Reserves. This attitude of helpful cooperation and sympathy on the part of the Mary Baldwin College students has led to the development of a fine spirit between the two Y. W. C. A. units.

For the boys at the Virginia school the Y. M. C. A. offers a similar program. They exchange activities with Fishburne, Augusta, and Staunton military academies. The Augusta and Staunton academies frequently volunteer the services of their jazz orchestras to provide music for dances at the school for the blind; and sometimes the orchestras are accompanied by groups of older students who join in the dancing with the visually handicapped. The neighboring academies also present evening programs of band music. The younger boys, members of the Boy Scouts, join in parades, courts of honor, and other activities of the groups which make up the local Stonewall Jackson Council.

Within the school itself, the program is carefully planned so as to prepare the individual for participation in these outside activities. Even in the regular routine of class work problems of adjustment are considered; for example, the physical education requirements provide for dancing classes designed to assist in overcoming awkwardness and embarrassment before the student is

granted the privilege of attending major social functions. In the domestic science and sewing classes the girls have an opportunity to study fashions, including the appropriateness of styles, color combinations, and trends in dress, thus helping them to meet a problem which so deeply affects social adjustment. To further assist the girls in this connection, a wardrobe of evening dresses donated by friends of the school is maintained by the Girl Reserve club, and each student is given an opportunity to choose an appropriate gown for the social affairs. The domestic science program also provides for a class in cultural science for both boys and girls, training them in table etiquette and introducing them to the responsibilities of host, hostess, and guest.

Blindness excites the sympathy of all those who come in contact with it, leading to a "do something about it" attitude that frequently results in the blind child receiving more than the average child in gifts and benefits from outside individuals and organizations. Because of his limited means and, in many cases, his limited abilities, the blind child too often feels that he has no further obligation than to say "thank you." To receive without the attendant desire to give in return may easily cause a warping of personality that makes for poor adjustment. Therefore, it devolves upon the school authorities to provide a social program which allows the individual to give as well as to receive favors. At the Virginia school this problem has been solved by arranging for an honor guest list; it is the privilege of the student to designate names of friends who may be invited to the social affairs at the school, thus giving the pupil a chance to return hospitality, and to develop poise and assurance in entertaining guests. The inclusion of friends who have in some way expressed an interest in the school, and the planning of activities which allow for a comradely fellowship between faculty, pupils, and guests, make the school-home atmosphere more genial and pleasing.

If the social program is to fulfill its dual role toward the group and toward the individual, it is important that all those coming in contact with it should have a definite understanding of the principles underlying it. Putting the plan in operation in the Virginia school included:

1. An outline of policies to be followed by school and faculty, and the goals to be achieved.
2. An agreement for complete cooperation by all faculty members in carrying out the social program.
3. An understanding, on the part of the pupils, that social and recreational activities be considered as privileges.
4. An understanding of conditions under which privileges might be secured.
5. Allotting time in the school schedule for training in the social amenities.
6. Planning the social program in conjunction with the social programs sponsored by national organizations for their school units.
7. Permitting school units of national organizations to carry as much responsibility as possible.
8. The operation of the entire program on the principle of pupil responsibility with faculty assistance.
9. Cooperation with interested outside agencies.

The activities included in the social program at the Virginia school are in addition to those planned for the school as a whole, and to those presented by members of the faculty. One outstanding social function is planned for each month with the Y. M. C. A. and Girl Reserve units serving alternately as hosts. The school schedule does not permit of other parties unless initiated for a particular purpose by a member of the faculty. This greatly lessens the possibility of cliques and the difficulties that arise when pupils sponsor social affairs without guidance. The social functions are planned so that each student may participate in activities of interest to persons of his particular age level. The maturity,

however, rather than the actual age of the individual, is considered in group divisions. Pupils of the eighth grade and high school comprise the senior group; however, those in lower grades who have reached the age of sixteen years and who are considered by the faculty to be sufficiently mature, are allowed to join this division.

It is the aim of the faculty to keep the social program flexible, so that special occasions may be observed with appropriate functions, thereby providing affairs of as many different types as possible. The yearly program, for example, might include such features as outdoor picnics; a Cinderella Ball, introducing the formal program dance; an informal Christmas dance; a formal New Year's dance with receiving line; an informal spring dance, and a graduate reception. More emphasis is placed on correctness of detail and on personality development in the senior group than in the divisions for younger students.

Social functions which would include both boys and girls from the intermediate and junior groups have been found inadvisable unless initiated by a faculty member for classroom purposes. In these divisions the girls are entertained with hikes and parties sponsored by Mary Baldwin College girls and by faculty members. Members of the Girl Reserves act as "big sister" advisers to the little girls in the Sunbeam Club, assisting them in planning such affairs as a Roosevelt Birthday Ball to aid the paralysis fund, autumn hikes, and spring picnics.

On all social occasions faculty cooperation is assured through planned meetings, at which teachers discuss the activities with committee members appointed by the organization in charge. The social schedule is designed to give each group an outlet for expression, to provide opportunities for relaxation and enjoyment, and to encourage the individual to prepare for wider privileges. Here, the program follows the accepted cultural pattern, endeavoring to fit the student for the social order in which privileges are secured by those who give first consideration to the needs of others, who sublimate their own personal wishes, who move with poise and assurance within the group. Thus, it becomes the aim of the student to earn privileges and responsibilities, and to value them because they have been gained through acceptable social behavior.

In spite of the efforts made to help all of the pupils toward social adjustment, there are some in every group who encounter serious obstacles because of their own personality differences. Members of the faculty who participate in the social affairs are always on the alert to assist the inadequate pupils, helping them to overcome awkward situations and to prevent their recurrence. At dances the formal program is encouraged, and at other parties games and contests are utilized to effect a natural change of partners. The finding of the desired partner for the next dance on the program, arrangements for assistance at the punch bowl, or even an amusing remark at a tense moment, are among the gracious aids which can be extended by faculty members. If certain individuals do not respond to the general social program, it is probable that their adjustment problems are greater than those of the average pupil; and in these cases special techniques must be employed to discover, first of all, the exact nature of the basic trouble.

Hobbe states that clues to personality problems may be obtained through "paper and pencil tests, teacher ratings, autobiographies and personal interviews." All of these techniques can be utilized—intelligence tests may be substituted for paper and pencil tests —in the attempt to seek out causes for poor adjustment. The personal conference method has been highly successful in the Virginia school, where the pupils seem to feel no hesitancy in taking their problems to the principal or to club advisers.

Inasmuch as the success of any program depends upon the persons who are responsible for it, the success of the program in the Virginia school may well be credited to the

(Continued on page 52)

An Old Invention in Active Use

Genevieve M. Haven

The invention of Louis Braille is in active use among the blind pupils at Perkins Institution notwithstanding the radio and the Talking Book that bring ever-increasing aid to the process of education.

The students of the Harvard Course, *Education of the Blind,* who as part of their training learned early in the year 1938-39 to write braille, were alert in observing its use among the boys and girls at Perkins. The answers to a question in the *Special Methods* examination last June, brought forth an interesting account of occasions during the year when braille was observed to be the means of efficient work and satisfying social pleasures.

A selection from the replies is printed below just for the sake of calling to mind the blessing of braille at a time when it is likely to be undervalued by reason of our bursts of enthusiasm over mechanical inventions of the twentieth century. How great the reward for the blind who acquire skill in finger reading!

"Braille is everywhere. It is on rulers, yard sticks, tape measures, maps, clocks, models. Practically everything which is done here at Perkins depends in some way or other on braille. The patterns in weaving are written out in braille and are woven from the braille guide. The excellent chorus sings an anthem every morning that has been memorized from a braille copy, or is read from one during the singing. In chapel students have given papers, written in braille and read to the assembled group. The practical use of braille which has impressed me most is the braille filing system of Miss de Dominicis. Here is a woman holding a position in an office of the American Red Cross, depending on braille at almost every turn."

"Music is taught by music braille; civics is taught by braille weekly magazines; the benefit derived from the braille textbooks is immense. At concerts, plays and other entertainments, programs are printed in braille and given to the pupils."

"As a means of taking dictation the blind have braille. The commercial department knows the advantage of it in this field. For writing, undoubtedly, braille will ever be useful, and the teacher will work hard for this."

"The reading of braille in the school is not only for literature (which might be supplied by the Talking Book) but for textbooks, "Current Events," "Time," "The Readers Digest," and many other publications which it would not have been possible economically or practically to put on records. In mathematics braille used in the calculations and for textbooks and tables will always be essential to the student."

"The practical uses for braille are: (a) to write letters to other blind people; they love to read their own mail; (b) to cook independently by use of braille recipes; (c) to be able to read without depending upon another person or a Talking Book."

"For the promising blind, braille is the most wonderful invention known. I have often seen its incomparable usefulness for blind people in executive positions, for telephone operators, for every one who handles money and has to keep accounts; in industry; for marking things; in fulfilling countless personal needs. It serves the blind as did the written word the human race. Need I say more?"

(*Continued from page 51*)

splendid spirit of cooperation between faculty and pupils, and to the sympathetic administration which witnessed its initiation. John Ruskin once said, "When love and skill work together expect a masterpiece." Those of us who employ our love and skill in attempting to guide youth have the right to expect human masterpieces as our reward.

The Talking Book in the Education of the Blind

BERTHOLD LOWENFELD, PH.D.

EDITOR'S NOTE: The following article was presented at the A.A.W.B. Convention in Los Angeles, and appears in the Proceedings, but we believe that it will reach additional interested readers by being printed here. It has been brought up to date by the appending of several paragraphs of new material.

EDUCATORS and teachers of the blind know how limited the blind child is in the field of his actual experience. While the seeing child acquires most of his conceptions through vision, the blind child is almost entirely confined to the data secured by his senses of touch and hearing. A comparison of the possible radius of action of each of the three senses clarifies immediately the limitations forced upon an individual lacking the sense of sight. It is, therefore, one of the major tasks in the education of the blind to furnish such children with as much concrete experience as possible in order to give them actual knowledge of the surrounding world and to avoid incomplete and incorrect ideas. In this process the Talking Book may become a most valuable and important factor.

It is one of the main objectives of a teacher of the blind to compensate for the lack of experience of her blind pupils by applying special aids and methods. It should be pointed out that the aim of those sponsoring the Talking Book is not to offer a substitute for the teacher, but to assist her in her difficult task of transforming blind children into competent, well-adjusted members of society.

The fields for the use of the Talking Book in the education of the blind may be defined as follows:

I. The Talking Book was originally designed "to bring to those without sight the best in literature from the whole world of inkprint books." Inasmuch as "every care is taken to have each sentence correctly articulated, and each word correctly pronounced," the Talking Book, which has already revolutionized the reading habits of the adult blind, will become a reliable source of knowledge, culture and entertainment for the blind student as well.

II. The reading speed of the average braille reader is comparatively slow. Ralph Vickers Merry (*The Education of Visually Handicapped Children,* 1933, p. 145) emphasizes the importance of this factor by stating that "since reading is so important a medium in gaining education this apparently unavoidable slowness cannot but result in a lower level of general accomplishment." The use of the Talking Book makes possible the shortening of the time necessary for reading. "The average speed of braille reading is less than 100 words a minute, while that of record reading is about 180 words." (Lewis W. Rodenberg: The Story of Books for the Blind, in *What of the Blind?* edited by Helga Lende, American Foundation for the Blind, New York, 1938, p. 172). It would, therefore, be possible to read about twice as much in the same time by means of the Talking Book. This is especially important for all the extra reading required in the higher grades. Braille, writing and reading, will always retain its importance as an instrument in the education of the blind, but the factor of retardation could be minimized considerably by the use of the Talking Book.

III. A comparison of the braille textbooks used in schools for the blind with the textbooks for normal children presents as the main difference a paucity of illustrations. It is generally known how important good illustrations in textbooks are and, no doubt, they would be of even greater value in teaching the blind. Visual illustrations must, of course, be replaced by tangible or audible ones. Tangible illus-

trations include all kinds of object-teaching material to give the blind child opportunities for tactual observation. Audible illustrations might supplement by sound many subjects now taught only by words. The Talking Book will become an "audible picture book" for blind children. Recordings of the different sounds of birds and other animals, dramatizations of memorable events, interviews with representatives of various trades and professions are only a few suggestions. The personal experiencing of certain situations, which are frequently inaccessible to groups of blind children, could be made available for class room teaching by special recordings of units of work in the organized subject-matter fields. In the field of language and literature (the only subjects for which records are now available), Mr. Longsdorf, head of the English Department of the New York Institute for the Education of the Blind considers the Talking Book "an excellent supplementary aid in teaching literature. It is an ally rather than a rival to braille and should be so considered." (THE TEACHERS FORUM, May, 1936.) Specifically prepared records for subjects such as civics, history, geography, nature study, spelling, etc., would make the Talking Book an indispensable instrument in schools for the blind.

IV. Miscellaneous Applications:

a) *In sight-saving classes*—Many pupils in these classes are not allowed to read inkprint because of their eye conditions, and some may read it to only a limited extent. It is always difficult to teach braille reading to children who have considerable vision. In all such cases the Talking Book would furnish an adequate solution because it would take care of all additional reading.

b) *In day-school classes for the blind*—The Talking Book might supply additional information and help the blind pupil to keep up with the regular classwork.

c) *In classes for subnormal blind pupils*—A considerable number of these pupils never become efficient braille readers and their learning is based mainly upon oral presentation. The Talking Book might replace textbooks for this group.

d) *Test methods*—Certain tests could be given by the use of special records; thus making research work more objective and reliable.

e) *Dramatics and poetry*—Records of classical works frequently selected in schools for recitation and memorizing should be prepared.

f) *In speech correction*—In a careful and comprehensive survey, Dr. S. M. Stinchfield discovered that about half of the 400 blind pupils studied had some form of speech defect. Records for the correction of the most frequent defects would prove of importance.

g) *Sense training*—Special records would provide an excellent opportunity for developing and cultivating the sense of hearing.

h) *Audible puzzles*—The interpretation of different sounds presented by Talking Book records might be asked for, using the technique of puzzles.

i) Magazines, or excerpts from magazines, for children and students, could be recorded periodically and collected as an information library.

In order to introduce the Talking Book as as an educational medium in schools for the blind, it would be necessary to produce special "teaching records" corresponding to the proposed uses as outlined above.

I. The producers of Talking Book records should give special consideration to the recording of a series of the best examples in classical and modern literature. Much has already been recorded, but there is still a wide field for future recordings.

II and III. The most important material for extra reading and language work should be designated and recorded. Textbooks, inkprint and braille, should be gone over and all opportunities for "audible illustration" discovered. For this purpose teachers of different subjects should be

requested to form an advisory committee. The experiments in educational broadcasting should be investigated and utilized for the production of the best possible teaching records.

IV. Recordings for the different suggested purposes should be carefully prepared by experts.

Various occasions for psychological research will be offered during the preparation of the Talking Book "teaching records" and afterwards as they are used. To mention only a few: an investigation of the duration of attention, a comparative evaluation of braille reading and different forms of Talking Book presentation, a study of the different forms of recorded presentations, a vocabulary study, a study of the speaker's voice, etc. These investigations would prove of general interest since experiments in the field of the Talking Book are closely linked to those on the radio.

One psychological effect of the use of the Talking Book in the education of the blind may be anticipated. The increased use of audible presentation will make the blind more "ear-minded." The sense of hearing is one of the two main sources of information for the blind—the sense of touch being the other. Widening the range and increasing the variety of impressions received by the ear must contribute to the formation of a truer conception of the world surrounding the blind individual.

Since the presentation of this paper at the A. A. W. B. Convention, the work of the Talking Book Education Project has made considerable headway. The American Foundation for the Blind in cooperation with the American Printing House for the Blind, is about to publish *Learning by Listening,* an annotated, classified, and graded list of Talking Book records for use in schools for the blind. This catalogue will enable the teacher to select from the available Talking Book records, those titles best suited to the needs of his class in their course of study. We are confident that this publication will contribute to the more effective use of the Talking Book.

There are being distributed among the schools for the blind a considerable number of Library of Congress sponsored, W.P.A. manufactured Talking Book machines made under the supervision of the American Foundation for the Blind. These machines will prove a welcome supplement to those already in use.

The American Printing House for the Blind has agreed to publish the recorded edition of a series of books for younger children. The Talking Book Edition Project has suggested such books as *Street of Little Shops* by Margery Williams Bianco, *Luck of the "Roll and Go"* by Ruth & Lathrobe Carroll, *Willow Whistle* by Cornelia Lynde Meigs, etc. The first titles of this series will be ready for distribution during the early part of 1940. These records will make available audible reading material for an age group for which very little provision has been made to date.

We have been fortunate in securing the cooperation of the Radio Script Exchange of the Department of Education in Washington and the script division of the National Broadcasting Company in the preparation of a planned series of records in the social sciences.

The Talking Book Education Project has started experiments on the effectiveness of different forms of Talking Books presentation in schools for the blind. Thirteen schools are cooperating in this research project which should make it possible to decide what material is best suited for presentation in braille and what on Talking Book records. In these experiments we have used for the first time sound effects as a means of illustration in short stories. The cooperation of the superintendents and teachers as well as the response of the children has been highly gratifying.

WHAT OF THE BLIND?
A survey of the development and scope of present-day work with the blind
Edited by Helga Lende, Librarian
American Foundation for the Blind
Price postpaid, $2.00

Our Bookshelf

KATHRYN E. MAXFIELD, PH.D.

HAVE you seen *SCHOOLS: The Challenge of Democracy to Education,* which is in the October, 1939 issue of the *Survey Graphic?* (Survey Associates, 112 East 19th Street, New York, N. Y. This issue, 40c.) Not only are all of the articles worthy of your attention, but as you read you will find yourself debating the educational policies and procedures of schools and classes for the blind in terms of the statements before you. Some recognition is given to the virtues of our present day schools but in general the emphasis is on the improvements which are urgent if the schools are to do their share in helping our country solve its increasingly complex problems.

A contribution by Myron Stearns (p. 594) calls attention to three things which are necessary if there is to be a forward movement in public elementary and secondary education: first, a central clearing house, such as an expanded Office of Education, through which information concerning leading educational methods can be authoritatively evaluated and widely distributed for the benefit of laggard school systems; second, a solution of the as yet unsolved problem of bringing the schools closer to life, of bridging the gap between classroom and reality; and third, the appearance of a demand from parents throughout the country for the greatly improved schools that are so desperately needed if democracy is to survive.

With regard to the increasingly important field of adult education Alvin Johnson's contribution makes the following pertinent comments:

"Labor adult education in America has developed a character differing in some essentials both from the general adult education movement and from labor adult education abroad. America has not accepted labor as a class, but labor as a function; and workers' education—with the exception of a few organizations under European influence—is functional rather than class education." (p. 602)

"The difficulties encountered by the adult educator do not arise out of the absolute deterioration of the adult mind, but out of the resistance of ingrained prejudices and preconceptions to new ideas and lack of ambition to carry through difficult and perhaps painful thought processes." (p. 603)

"Preconceptions apart, the most formidable obstacle to adult education consists in the methods of common thinking. To the average man the single instance counts as the precedent counts with the lawyer. Neither layman nor lawyer is trained to weigh the single instance against the multitude of incidents and thus to develop a balanced judgment." (p. 603)

William Allan Neilson makes a remark which cannot but call forth an emotional response from any teacher, if only because of the kernel of truth it holds, when he says that various considerations he has previously listed have "tended to draw into the profession a large proportion of timid and unimaginative persons to whom moderate comfort, a moderate competence, moderate security are the reward for a moderate amount of moderately conscientious drudgery. Against the dead weight of this mass of mediocrity the gallant minority of able and devoted teachers, endowed with enthusiasm and initiative, will have to strive if democracy is to be saved by education." (p. 611)

The November issue of the *Survey Graphic* contains much interesting material for teachers, also. Social science teachers will appreciate especially Lewis T. Nordyke's article, "Ladies and Lynchings," in which he tells the story of the remarkable fight of southern women

(*Continued on page 58*)

Dr. Allen Says:

ON PHYSICAL EXPRESSION

BACK in the late 1890's, at Philadelphia, a visitor had spoken of our kindergarten children as "little waifs." Though inwardly resenting this characterization I could but admit that the blind mannerisms common among them justified it. From that day we studied how we might overcome these obstacles to acceptability and respect. Indeed, they were only less conspicuous among the older pupils. Our partially seeing supervisor of music practice was a chronic head-waggler. We considered introducing a department of manners.

Presently there came a letter from another recent visitor, Miss Royer, a student at the Emerson College of Oratory, Boston, saying that she had described to Dr. Charles W. Emerson, the founder, the habit movements of our children which to her indicated lack of poise, of balance, and of muscular sense; that he had not only declared routine declamation inadequate but had suggested adding certain corrective exercises based upon the theory that the body (including voice, gesture and presence) should be made the servant of the mind, willing and trained; and that the mind should be trained to use it as its natural means of expression.

Now Miss Royer's interest and personality eventually led me to employ her as a part-time instructor in what we agreed to call physical expression and declamation. In order to enlist the understanding cooperation of our staff a working plan was discussed and adopted at teachers' meeting, which was: 1st, for the specialist to meet the grade teachers for a short period weekly and by given exercises focus their attention upon points of importance; 2nd, for her to teach the pupils of each grade in the classroom in the presence of their teacher and of one another, for a half hour each week; and 3rd, for her to drill individual pupils in the assembly hall where they would subsequently declaim before the school.

Naturally the teachers helped find "pieces" and saw that these were memorized. The school printery supplied a lot more in braille; yet we never had enough of the right sort, Miss Royer having not only to dictate selections but to adapt and even write a few plays. Her enthusiasm was contagious; and before the end of her first year she had given a public declamation contest so surprisingly good that I still recall it after all these years.

Now since it is the muscular sense which saves us when we lose our balance or walk in the dark, our specialist recognized its development as essential to the blind. To develop this and their sense of direction she used exercises of the Emerson system; to instill "the idea" in expression, Dr. Neff's foundation plan; and to overcome the prevalent speech defects, Bell's visible speech.

It is of no little interest to report that, when we had brailled Dr. Emerson's *Physical Expression,* certain older boys of their own accord studied and practiced daily some of its distinctly expressive exercises, and by so doing improved themselves greatly. These boys were then working hard in the gymnasium and on the grounds to make the most of themselves athletically.

Our annual report for 1903 already noted a marked improvement in pupil poise and personal carriage; also a physical expression which followed a corresponding mental impression which the pupils never had got before. Visiting teachers remarked upon the naturalness of speech and gesture; also upon the continual willingness of these young blind people to tackle anything. Obviously our new department had come to stay, Miss Royer continuing as Mrs. Greaves, to conduct it under Principal Burritt. Indeed, he featured it pictorially in report after report. Plays

which never lost their interest were *Ingomar, The Rivals, As You Like It, The Merchant of Venice, A Midsummer Night's Dream,* and a historical pageant, this last including practically all the school's blind population, both pupil and teacher. There was no joining of forces in any play; boys took the women's parts effectively in *The Rivals* and girls as effectively the men's parts in *Ingomar* and in the Shakespearean comedies. "This meant," to quote Mrs. Greaves, "that my blind pupils were not only learning how seeing people act but how those of the opposite sex do."

As You Like It was delightfully given on the institution grounds; scenes from other plays were repeated at the Lighthouse in New York and before the Drama League in a Philadelphia theatre.

Presently this "physical expression," next to music and the boys' athletics, had permeated the whole school life, raising its intellectual, mental, and moral tone. The disagreeable mannerisms, once so conspicuous, had disappeared. We had become almost a normal community and were so regarded by our neighbors who had originally resented the coming of the "blind asylum" to Overbrook.

Mrs. Greaves recalls that the after-effects of her labors were often marked: for example, an ambitious girl attended the Neff School of Oratory, Philadelphia; another who started with a defect in speech became a successful school teacher; a boy, also with a speech defect, is today Overbrook's leading insurance agent; while another graduate, a piano tuner, reports that his expression practice had so taught him how to act when entering ladies' parlors that he owed his large connection to its teachings.

Finally, if educating the blind for social and economic citizenship requires their acceptability as well as their employability, can we afford to neglect training them in physical expression? Where blindness commonly closes the door to employment, a pleasing personality may keep it open. The well-believed motto of Winchester College, England, is "Manners makyth man."

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against that evil. (p. 683) The final pages of the magazine are devoted to an article by Clyde Miller and Louis Minsky called, "Propaganda—Good and Bad—for Democracy," which gives food for thought. (p. 706)

In the *Journal of the National Education Association* for November, Harold Saxe Tuttle writes on "Motive-Centered Education," emphasizing a point which many so-called progressive schools seem to have forgotten. He says, "We must shift from emphasis on *knowing about means* to at least equal emphasis on *caring about ends*. If the human race can be induced to care enough about ends having social worth, it will be motivated to find the needed means more effectively than at present. Policies and methods rotate about desires. Knowledge is subservient to motive." (p. 234)

This seems to bring us back to the first comment regarding the need for a demand from parents if schools are to improve. There still remains unanswered the question of the proper adult education for parents if they are, first to greatly desire better education for their children, then to wisely choose their demands, and finally to know how to press them effectively.

On page 135 of the October *Outlook for the Blind* will be found listed a group of "Practical Books in Braille." Older pupils, if they are allowed to experiment during their leisure time, will be delighted with many of them.

With the granting on August first of the one-fare concession to blind persons traveling with an attendant upon the lines affiliated with the Southern Passenger Association, this privilege is now available on railroads throughout the United States. Readers wishing to secure the coupon book which is necessary in order to take advantage of this concession, should write to the American Foundation for the Blind, 15 West 16th Street, New York, N. Y., for instructions and an application blank.

Memorandum on Timing the Stanford Achievement Tests

Samuel P. Hayes, Ph.D.

When the directions for giving these tests to blind children were first published in the Forum for May, 1937, the time allowances for the different tests were set at two and one half times the periods allowed seeing children, with instructions for the tester to stop the children and mark with a red pencil the last item finished. Then the children were allowed another ten minutes, to bring the period up to three times the time allowance for the seeing. Several schools reported the results obtained with the two time limits and in the Forum for May, 1939, a statistical study of these results was presented. Two interesting facts appeared. It was discovered that in some of the tests a considerable number of children got higher scores with the shorter than with the longer interval. In a number of tests an omission is better than a failure because these tests are scored right minus wrong or right minus one half wrong, failures thus being penalized. Now, the longer time allowances made it possible for the children to push ahead to the later test items which become progressively more difficult; and a child who might have done acceptable work in the first 25 minutes might have so high a proportion of failures in the last 10 minutes that his score would actually go down. The second interesting fact was the result of the statistical study which showed that there is no significant difference between the scores obtained with 25 and 35 minutes, i. e., the shorter time allowance measures the ability of the children quite as well as the longer period. So it is obviously wise to save testing time by using the shorter periods.

In the article for May, 1937, it was proposed to meet the difficulty of the great length of tests 1, 9 and 10 by making each one into two forms, printing alternate test items to make them about equal in difficulty. This has been done for tests 1 and 10, and an appropriate time allowance has been made. Three times the period for the seeing for test 1 would be 75 minutes. As this will ordinarily be the first test used and the children will have to adjust themselves to the technique of testing, 35 minutes would seem to be about a fair time allowance for one half of the test. A similar compromise is made for tests 9 and 10, both of which require the use of an arithmetic slate; and the mechanical difficulties involved in presenting the material of test 10 through

Table of Time Limits for the Stanford Achievement Tests

TEST NUMBER	TIME LIMITS FOR SEEING	TENTATIVE LIMITS FOR BLIND, MAY '37	SUGGESTED LIMITS FOR BLIND, MAY '39
1	25 min.	40 plus 35	Form 1 35 min. Form 2 35 "
2	10	25-35	25
3	(Dictation test: no time limits)		
4	10	25-35	25
5	10	25-35	25
6	10	25-35	25
7	10	25-35	25
8	10	25-35	25
9	20	40-60	50
10	30	40 plus 35	Form 1 40 Form 2 40

the fingers seem to necessitate more than the two and one half times formula used with most of the tests. Test 3, of course, has no time limits, being a dictation test given orally.

In scoring tests 1 and 10, if only one form is used, the raw score must be multiplied by two before comparing it with the seeing conversion table at the bottom of the inkprint test pamphlet.

The order in which the tests shall be given and the number of sittings to be devoted to them will naturally vary with the school program. If only one test is given each day, and only one form of tests 1 and 10 is used, ten sittings would be needed. Perhaps such a plan would involve the least student fatigue. In one school it has been found feasible to give most of the tests to all the grades from the fourth up, at one time, having them meet in their large assembly room at 8 o'clock each morning with their teachers to assist in passing test materials, recording progress, maintaining order, etc. To give space for work they are seated in alternate chairs, using the vacant chairs at their right to put their arithmetic slates or pamphlets on, and writing with their braille slates on their laps.

If it seems best to work longer on a smaller number of days, tests 1 and 3 might be given the first day, tests 2 and 4 the next, then 5 and 6, then 7 and 8; allowing separate days for 9 and 10. This would raise the working time to 50 minutes on most days, the preliminaries perhaps increasing it to 60 minutes.

AN UNUSUAL BOOK

A BOOK of more than ordinary interest to teachers of the blind comes from the presses of Whittlesey House (McGraw-Hill Book Company, New York, N. Y.) this month. It bears the title *I Begin Again,* and is written by Alice Bretz. In its way, the book is unique. Blindness came to the author in middle life. She had immediately to face the innumerable details of readjustment and at the same time develop a new working philosophy.

In *I Begin Again* Mrs. Bretz tells how she did both. Moreover she tells her story with a skill, with an unusual artistry of presentation, and with a definite penetration into personal problems which in their way form important elements of the whole general problem of loss of sight in adult life.

That *I Begin Again* turns out to be a success story is no happy accident. Mrs. Bretz from the start faced her predicament with a realism that left little scope for self-pity. She came by her success—the achievement of an independent life lived independently—by sheer force of good sense and good humor. The philosophy which she developed and which she expounds in the book sprang directly from these two attributes. The book makes excellent reading for the professional worker and for the general public alike. It should prove an indispensable ally to all those who have to deal with individuals who face the difficulties occasioned by blindness occurring in adult years.

The price of this book is $1.75.

Our Contributors

Miss Elizabeth Hall, a visually handicapped teacher of the primary grades at the Washington School for the Blind, has recently received an A.M. degree from the University of Oregon.

Miss Dorothy Post, in addition to her teaching duties at the Virginia School for the Blind serves as girls' counselor and is actively interested in the social program.

Miss Genevieve M. Haven is the tutorial guide of the Perkins-Harvard students in their course in special methods.

Dr. Berthold Lowenfeld, a member of the staff of the American Foundation for the Blind, is in charge of the Talking Book Education Project.

Dr. Kathryn E. Maxfield, Dr. Edward E. Allen and Dr. Samuel P. Hayes need no introduction to even occasional readers of THE TEACHERS FORUM.

THE Teachers Forum

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The Meaning of Creative Activity in the Education of the Deaf-Blind

Viktor Lowenfeld

That the subjective feelings of bodily and muscular sensations determine the pictorial expression of the blind, and that the stimulation of these subjective experiences influences their whole mental development, are among the most interesting of the conclusions resulting from my studies of representations of space and shape as manifested by the visually handicapped.[1] For the past fifteen years I have been investigating the significance of creative activity in the education of the blind and deaf-blind and recently at Perkins Institution I have had an opportunity to study a unique case which has illustrated vividly the meaning of subjective autoplastic experiences in connection with this type of teaching.

Because of the lack of another important sense, hearing, the deaf-blind individual is far more dependent than the blind upon bodily experiences, upon contacts of the self with the outer world. Bodily experiences are the connecting medium between the ego and its surroundings. If they are disturbed or disordered, conscious contact with the outside world is lessened or entirely destroyed. It is therefore most important, in the education of the deaf-blind, to emphasize and stimulate bodily sensations as much as possible. Thus, while the deaf-blind person learns to speak by means of the vibration method, language remains an abstract thing, sounds without meaning, unless the teacher brings it into relation with reality. This is possible, of course, only through the sense of touch, through bodily feelings which are in close relation to the kinesthetic sensations. But mere acquaintance with various objects does not always lead to genuine experience, for it is the circumstances under which the acquaintance is made that determine the nature of the experience.

My experiments have shown that modeling in clay is an excellent means of giving force to these subjective expressions, for it not only allows the teacher to control the circumstances through which experience is attained but permits a plastic representation of touch sensations and bodily feelings. Details which are important in the child's experience are overemphasized in the plastic representation while meaningless parts are neglected or even omitted. During my investigations it was apparent that these proportions of value as sensed by the deaf-blind and other non-visual persons, clearly demonstrated the subjective attitude of such individuals toward their surroundings. For a teacher, this development opens a new field of possibilities for controlling the world of imagination of blind and deaf-blind pupils. An analysis of the plastic modeling results will not only reveal the lacks and limitations of both the imagination and the bodily feelings, but will serve as a gauge of mental development as the instruction proceeds.

It is my purpose here to show the pedagogical results which I obtained from employing this method in the very difficult case of a deaf-blind girl at Perkins Institution. This eleven-year-old girl had been totally blind and deaf since birth, and had been exceptionally shut in and restricted in her experiences. She was extremely limited in her expressions, and had much more difficulty than the average deaf-blind person in learning language through vibration. She spoke only when she was forced to do so and then very poorly. Recognizing that creative activity stimulated by bodily feelings would serve as an excellent medium in the development of language, I encouraged this pupil to begin at once certain experiments in plastic modeling. It is easy to understand the

[1] V. Lowenfeld & L. Munz: "Plastische Arbeiten Blinder," published by R. M. Rohrer, Vienna.
V. Lowenfeld: "The Nature of Creative Activity," published by Harcourt, Brace & Co., New York, N. Y.

Figs. 1 to 6

immediate adjusting effect of this work on the mentality of the deaf-blind, for being able to express themselves in any capacity not only enlarges their mental scope, but also gives them self-confidence. Through experiencing the self the handicapped person establishes contact with his surroundings, becomes an integrated member of society, and loses his feeling of isolation. A very important result in this closer association with environment, however, is the stimulation of language development through contact between the word and its meaning.

When I began to work with the pupil at Perkins Institution, I let her sit down at the modeling table and, touching her body and placing her finger on my mouth when speaking, I told her: "You are sitting." Again touching her body in order to make her conscious of her attitude, I said: "You are a sitting girl—a sitting girl." Then I gave her some clay, frequently repeating the words, "sitting girl." She began to work with the clay, and Figure 1, illustrated here, was her first plastic. First she made the body, then the legs, which she placed at the correct angle with the body, showing at once that she wished to indicate the "sitting girl." Then

she made the arms, but these, as the illustration shows, were without differentiation, and she was also unaware of their importance in connection with the body. She then made the neck and the head; on the head she fashioned a nose, but it was drawn out from the clay rather than added; then she made holes to represent the eyes, and one hole as a mouth.

For the next lesson I brought her an apple in order to make her conscious of the feeling of her hands. Putting it into her hand, I said to her: "I put an apple in your hand." Then I took the apple away again, and repeated the performance several times, always closing her fingers over the apple while saying the words. Finally she took up the clay, and made the plastic, Figure 2. In this the arms have acquired definite meaning, not only the arm connected with the apple but also the other arm which she modeled associatively. If you look more closely you will observe that the feet are represented in the same manner as the hands. This is obviously an expression of the relation between them, which probably comes from the sameness of their use in feeling vibrations. This mental progress on the part of the pupil marked her first step in finding her own method of expression: for the first time she indicated in the differentiation of the hands her realization of the close connection between action and plastics. This experience also made her conscious of the starting point of the arms, and suddenly she recognized their relation to the body. Step by step we made use of modeling as a means of interpreting in plastic representation her own bodily sensations.

After two weeks she made Figure 3, representing a very tired girl. Placing her fingers upon my face while speaking, I had said, "You are very tired—sleepy—very tired." She grasped the meaning of my words and leaned forward, relaxing and assuming the position which she later represented in the plastic. Touching her arms, I continued speaking to her. "You are holding your head," I said: "you are holding your head in your hands." Then, suddenly, came my greatest reward, for she repeated spontaneously: "holding m-y head in m-y hands." The emphatic use of the word *my* indicated that she did more than repeat a sentence, for through her sense of touch she had in one brief experience pushed back the limits of her little world of knowledge.

I cannot convey the sense of gratitude I felt while watching my pupil form this plastic figure. Holding her head in her hands—this heavy, tired head—she became conscious for the first time that she had ears; she grasped them, then added ears to the clay model, overemphasizing them because of their importance to her by exaggerating their size. On this occasion she also found that she had a pin in her hair and this, too, she added to the plastic, as is seen on the left side of the figure. It is obvious, too, that she began at this time to realize the function of fingers in the grasping of objects. The number of fingers is incorrect and they are drawn out from the clay, not modeled as single parts. This indicates that she had become conscious only of their function and her modeling shows only a representative symbol for "hand" and not single fingers. She used a similar technique in forming toes on the feet in this third figure. It is important to note the fact that she drew out fingers and toes. By adding them separately she would have shown her consciousness of them as individual parts, a step not yet achieved in this plastic. But the great step in the development of her imagination and space perception was achieved when she was able to give her model the intended position; she had become aware of the relationship between movement and plastic, as well as the differentiation between upper arm, forearm, hand and fingers. This latter is shown by the position of the elbows resting on the thighs, and the hands holding the head.

I never saw this child more excited than after having finished this plastic. Spontaneously she began to speak to me and to her governess who was present. She eagerly start-

ed her next figure. While she had made rapid progress in her plastic interpretations of the body, there had been very little change in the representation of the face. Therefore, I called her attention to the yawning of a tired girl. "You are yawning—very tired—yawning," I said. I imitated yawning to demonstrate the idea; then she yawned too, and set about forming Figure 4. First of all, she abandoned her former technique of drawing features out from the clay; instead, she made the entire head by adding parts to represent ears, eyes, nose and mouth, indicating that she had become conscious of each individual part. Moreover, she modeled a tongue and placed it in the proper position in the open, yawning mouth. This act of adding indicates an analytical process of thinking such as this: "I have a tongue, and form it, and place it in the right place in the mouth." It should be understood that this is a very complicated mental act. Putting on the nose presupposes holding and forming the nose consciously, and placing it properly. The further differentiation of the nostrils shows very clearly the advance from the representative symbol to an actual form of the object. As a single symbol the chin is added and it is significant to note that the ears are no longer exaggerated, indicating that they have now assumed normal importance.

Guiding her attention more and more toward individual experiences, I asked her whether or not she liked candy. "Yes," she answered. I had a piece of candy in my pocket and gave it to her. Then I asked her: "Is this candy hard?" She did not understand until I had given the words meaning by biting something hard myself. Then I asked once more: "Is the candy hard?" "Yes," she replied. "But show me, how hard?" I said, and she bit the candy into pieces.

At this point I gave her some clay as the traditional signal for starting to interpret the new experience, resulting in Figure 5. You will see at once the importance of the representation of the teeth which she has now formed for the first time. But you also can recognize the emphasizing of the two eyelids, the action of which accompanies the experience of pressing the teeth together. You can feel this muscular movement on your own face if you reproduce this situation. On this day she had two hairpins of which she was very proud; this may account for their exaggeration and again shows the importance of personal experiences.

After four weeks of work I gave her a braille book. She understands how to read a little. I asked her to read for a while, then I said to her: "Girl reading." She answered by saying, "I *am* reading." I again repeated "reading," handing her the clay. She immediately started to work, modeling the representation of a reading girl, Figure 6. Only the day before she had received a necklace as a birthday gift and it, as you can imagine, was of tremendous importance to her. In studying this plastic, you should not be misled, for the large ring around the neck of the figure is supposed to represent this necklace.

If you look closely at this plastic you will find that in it each single part has been added. Therefore we may assume that her whole conception of her experience is now changed. Instead of a symbolical lump of clay for a hand, she has made a hand with five single fingers cast in a definite position—that taken when reading a braille book. "One, two, three, four fingers—five, thumb," she said while she worked, and she placed the thumb separately in its proper position as you can see on the right side of the picture. She became conscious not only of the fingers but also of their kinesthetic functions in reading. Now every part of the body is emphasized: shoulder, elbow, knees, and so on. During the last week, while working on Figure 6, she has been talking spontaneously, naming all the details and actions that have occupied her attention: "Eyes, lids, finger, reading, book, legs, etc." Her governess has told me that there has been a remarkable improvement in her general attitude, and that she has given many indications of feeling much happier and more free.

(*Continued on page 72*)

Visual Aids in the Teaching of Astronomy to the Blind

J. A. Wellington and D. H. Morgan, Ph.D.

In the eighth and ninth grade general science classes at the California School for the Blind, one unit is devoted to an explanation of certain conditions on the earth through the study of the solar system. The instructor was faced with the problem of presenting the material in such a way that it would be meaningful. Even with the use of charts in teaching the seeing child, the concept of the solar system is abstract and remote from the experiences of the pupil. In the case of the blind, without the use of charts, an understanding, as contrasted with rote memory, is infinitely more difficult to develop.

Within the past two years several models, showing the relations between the sun, moon, and earth, have been constructed in the shop of the California school. These models are designed to illustrate the answers to questions such as the following:

1. Why do we not have the warmest weather in January when the earth is nearest to the sun?
2. Why is our time different from that of New York?
3. What makes the moon change in appearance during the month?
4. What is an eclipse?

The seasons of the year are explained by the use of the model shown in Figure 1. The orbit of the earth is represented by a groove, elliptical in form, which has been cut in the top of a cabinet. The earth model is a six-inch terrestrial globe, the base of which is fitted with two dowels of different sizes so that it may be placed only in the correct position at various points in the orbit. Since the continents are raised, they can readily be identified. Wire circles around the globe indicate the arctic and antarctic circles, Tropics of Cancer and Capricorn, and the equator.

The rays of the sun, extreme north, intense center, and extreme south only, are illustrated by three sixteenths of an inch maple doweling. The pupil in tracing the course of the earth around the sun notes the changes in the relative positions of the earth and the sun. He sees that, in one position of the earth in its orbit, the arctic circle is exposed to the rays of the sun. As the earth rotates on its axis, the slanting rays of the sun continue to strike this area. The pupil understands therefore, why the sun does not go below the horizon in the far north during the summer and why the northern hemisphere is warmest when farthest away from the sun. At the other side of the orbit, he sees that the arctic circle is hidden from the sun by a portion of the earth, resulting in long winter nights. After a detailed examination of this model, the pupil comprehends the underlying causes of seasons and the differences in temperature in various latitudes.

For convenience, a circular orbit would be better than the one described above since the "rays" of the sun would not need adjustment after each change in the position of the earth.

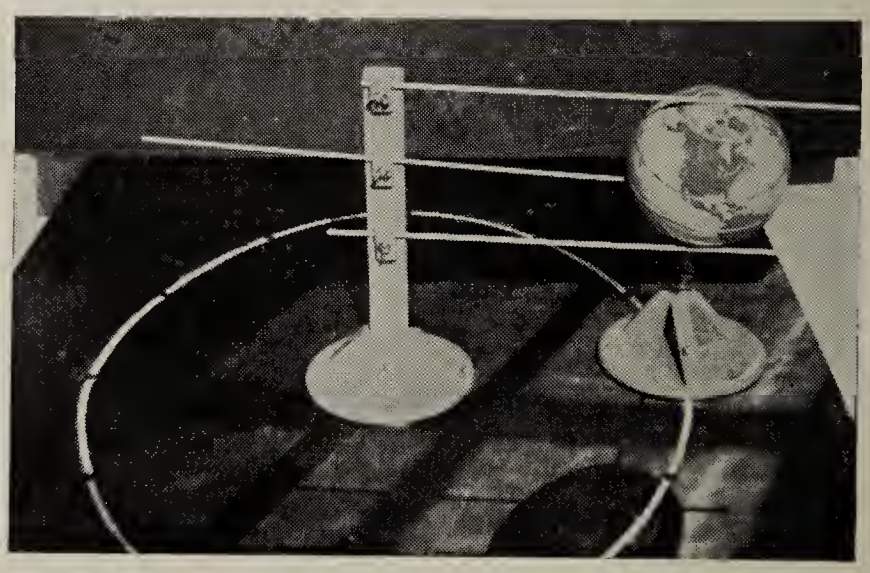


Fig. 1

Time is illustrated by means of the model in Figure 1 and an auxiliary model. The latter is a flat surface, the center of which is a rotating disc. From the center of this disc radi-

ate raised lines representing intervals of 15° longitude on the earth. Braille letters beside these lines indicate well-known cities throughout the world. On the surface outside of the disc, the time is given in braille. After a given longitude has been rotated to a specified time, the corresponding time at another location on the earth may be quickly determined.

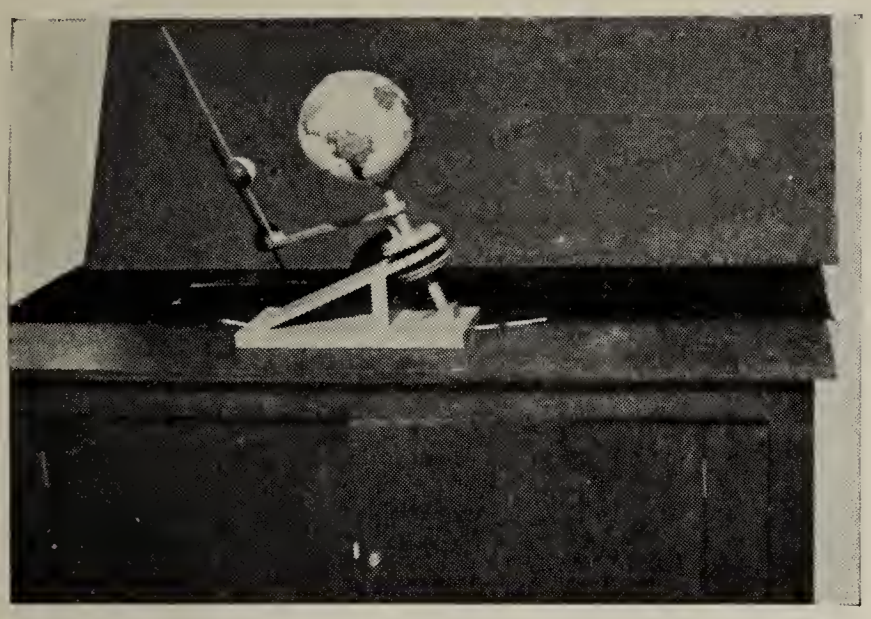


Fig. 2

Another model, Figure 2, of the earth is also fixed on its axis and revolves in a trunnion. Rigid to this axis, just below the earth, is a disc having twenty-four serrations, in which a catch allows it to rotate only from west to east unless released. As the earth rotates the hours are "clicked" off by the catch. Longitude is marked at intervals of 15° on the Tropic of Cancer. The Greenwich meridian and the international date line are specially marked in braille.

Lower on the axis, and rotating about it, is a hub with a disc containing twenty-eight notches. This hub carries an arm about fourteen inches long at the outer end of which is a one-fourth inch shaft at right angles to the arm. On this shaft is located a smooth black sphere which represents the moon. This model is adjustable vertically so that it may be in the shadow of the earth or in the light of the sun. A rough detachable hemispherical surface, aluminum painted, represents the portion of the moon facing the sun. By rotating the earth on its axis, the rising and setting of the moon is shown; by revolving the moon around the earth, with the rough surface always in the direction of the sun, the different phases of the moon are illustrated.

To show an eclipse of the sun or of the moon, another set of adjustable "rays"—north, east, south, west, and center—is used (Figure 3). The pupil "sees" that when the moon, earth, and sun are in line, the earth prevents the rays of the sun from striking the moon; likewise, that when the moon is between the earth and the sun, it cuts off the light from the sun to a section of the earth. It is evident to him that an eclipse of the moon is visible over a broader area on the earth than is one of the sun. For these illustrations, it is necessary to change the positions of the models, since, as in many charts, the distances are badly out of proportion.

Various needed changes have been noted since the models began to be used. Constant modifications and additions are being made to the above series of models as trial in the classroom reveals their limitations.

Before the models are examined, several periods are spent in discussing the solar system. As questions arise, various hypotheses regarding certain phenomena are proposed by

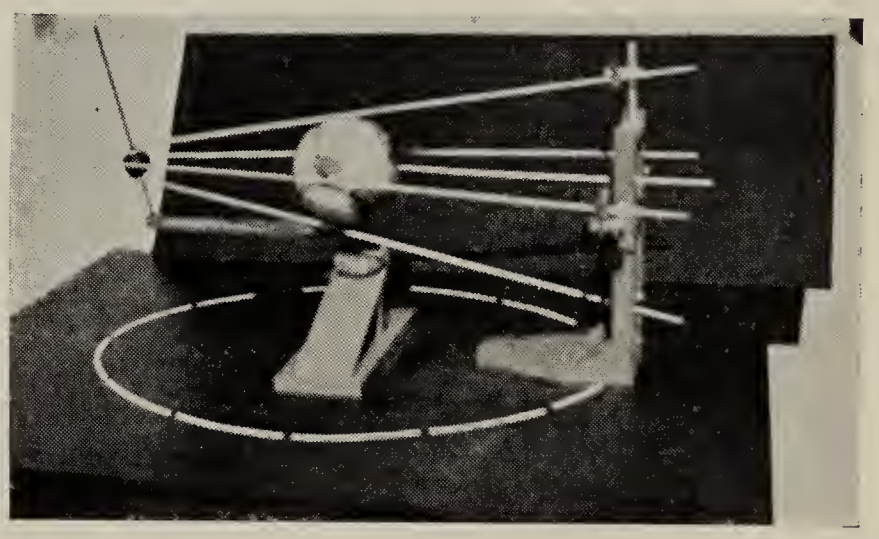


Fig. 3

members of the class. When the class is ready for the models, the instructor first describes the general nature of the individual model to the class as a group. Under his supervision, one of the pupils examines the model and then acts as teacher for the next pupil. This procedure is followed throughout with the last pupil "teaching" the instructor. By this

(*Continued on page 72*)

Vocational Agriculture for the Blind

Arthur Delamarter

How are the blind to earn a living for themselves? This is a real problem even for the seeing in these days: what, then, of those with a handicap? Can we prepare them for economic stability? What can be done to give them a better chance in life? Are there certain types of agriculture that offer opportunities to the blind and the partially seeing?

The above mentioned questions have been in our minds for some time and we are attempting to do something about the answers. We know, of course, that here and there are to be found totally blind and partially seeing persons who are successfully engaged in various agricultural pursuits. At the Michigan school we have been giving courses in agriculture, with emphasis on poultry raising, for several years. This year we have federal as well as state approval and are operating under the Smith-Hughes Act whereby we secure federal reimbursement for our vocational work. Dr. P. C. Potts, of the American Foundation for the Blind, during a recent visit said that so far as he knew our institution was the first school for the blind to operate under this plan of vocational agriculture which has been in operation for many years in our public high schools.

Since a large percentage of our students come from farms and small towns, and since some blind and partially seeing persons have engaged in agricultural pursuits successfully with little or no training, is it not reasonable to suppose that many of our boys, with definite training in this field, could hope to earn a living in whole or in part? We have answered that question in the affirmative at the Michigan school and therefore have enlarged our agricultural program this year.

In teaching vocational agriculture it is necessary, of course, that the boys learn by doing. They must have projects of their own. They must actually be farmers on a small scale while taking these courses. Class instruction is for the purpose of helping the student do a better job so that he may earn more money for himself. I do not say that the preparation of students for earning a living is the only value of courses in vocational agriculture, but that is a primary purpose. Since we are preparing our students for life we must see, in so far as is possible, that they will be able to earn their own living. To do this successfully we must start them at the job while they are in school.

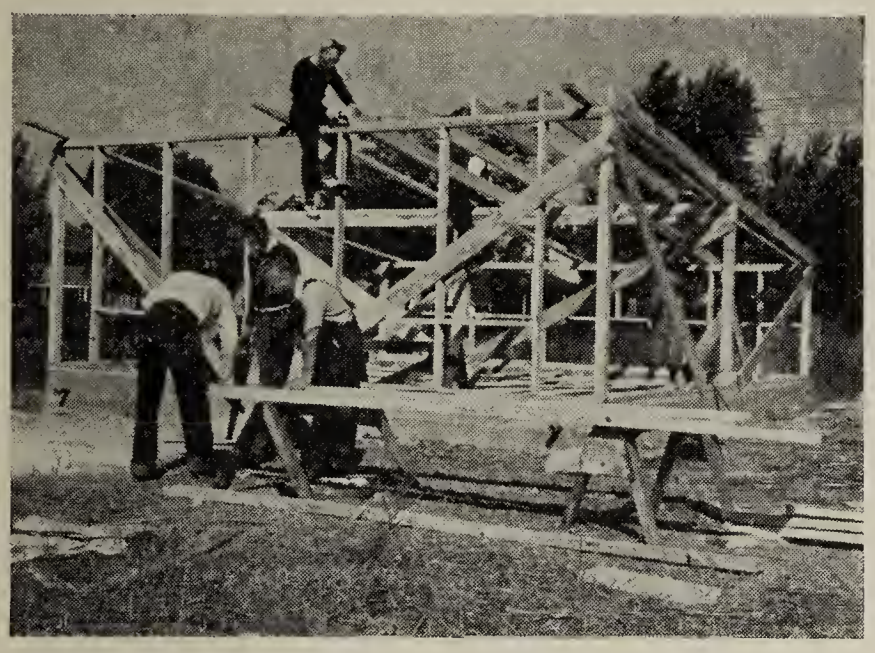
Naturally there may be some difficulty. Most agricultural work must be carried on throughout the summer. Public school students are usually at their homes near the school, but our pupils are scattered all over the state. It would be impossible to supervise agricultural work at their homes during the summer, and moreover, they would not be at home long enough to start and complete their projects. It would seem that supervised projects must be carried on at the school. What, then, about vacation time? After ten months of school the boys are eager for vacation. They want to go home. What's to be done?

To take care of this period we have adopted a plan which already has the approval of the State Board of Control for Vocational Education. The boys form partnerships here at the school. Two boys interested in the same type of work arrange for a joint project. When classes are over in June one student will go home for a vacation during the first half of the summer period and will then return to relieve his partner who will spend the last half of the season at home.

Of course this arrangement does not always meet with the approval of the boys and their parents. However, when the plan is fully explained to them they usually agree to give up part of the annual vacation period

with the thought that the summer project work, if well done, will yield them some profit for their time. Also, we plan to provide opportunities for swimming, camping and other forms of recreation during the summer.

This program naturally requires certain facilities for carrying out the projects. We are fortunate in having about ten acres of farm land on one side of our forty-five acre campus. This plot has been set aside for supervised agricultural work. We have a 20′ x 20′ poultry house which was built by students a few years ago, and also a greenhouse. We have ample opportunity for landscape gardening on our campus and at our new home economics practice house. We do not have sufficient space for general farming or dairying but we are of the opinion that, for our students, farming of a limited nature, including poultry raising, gardening, fruit growing, floriculture, greenhouse work, and landscape gardening, offer the greatest advantages. We have adequate facilities at the school to enable the students to do supervised farming along these lines.



"Ag" Boys at Work

Although additional equipment has been needed from time to time, particularly for the poultry raising project, yet our superintendent, Mr. Josef G. Cauffman, is so interested in the work that he has arranged to advance small sums in the expectation that this money will be repaid from our federal reimbursement at the end of the year. Eventually, of course, the houses and equipment will be paid for out of the receipts from the projects. Depreciation of houses and equipment will be added to the cost of the projects to be deducted before profits are available to the boys.

Recently we constructed a new 20′ x 20′ poultry house, all of the work being done by members of the agriculture classes. The house was staked out, batter boards erected, levels determined, trenches dug for foundation walls, forms erected, concrete mixed by hand and put into the forms, and a concrete floor poured. At the same time we have been doing work in the greenhouse, visiting the Lansing market where farmers sell produce, talking with the farmers, and planning new projects. At present we sell eggs to teachers and to the school, but as the work advances we plan to sell many varieties of produce to a large group of Lansing people.

We enroll ninth and tenth grade pupils for a one-year course in poultry raising, giving five 90-minute periods each week to this work. As rapidly as we can provide equipment these boys will be permitted to form partnerships for poultry projects, each pair being allowed 100 to 125 laying hens and raising their own pullets each year. Those who wish may carry on this project during the entire three years in which they are taking vocational agriculture courses, increasing the size of their undertaking if that seems desirable. We have nine boys in this class at present.

We have a second-year course in gardening and fruit growing, with an enrollment of eight boys this year. These boys have already formed partnerships and are beginning to make plans for their work. Each pair is asking for from one-quarter to one-half acre of ground for a garden. The totally blind will undertake projects more limited in scope than those with partial sight. Opportunity will be afforded to all the boys to carry on gardening projects each year in addition to the poultry projects in which they might be engaged.

The third year of our three-year program of vocational agriculture has been planned to

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I Begin Again—A Review

Minnie E. Hicks

I Begin Again, by Alice Bretz, Whittlesey House, McGraw-Hill Book Company, New York, N. Y., 1940, pp. 201, $1.75.

A large proportion of the "best sellers" of recent years have been stories of catastrophe—stories whose closing chapters leave their characters broken and powerless in a futile struggle against forces of nature or a faulty social system. The reader turns from them sick at heart; he has gathered no strength to cope with his own trials, seen no vision of hope for the world. *I Begin Again,* too, is a story of catastrophe—that of total blindness occurring in middle life. In it Alice Bretz tells simply and frankly of her losses and of the burden that she must carry to the end of her journey; but her wholesomeness of viewpoint, her delightful humor and vividness of portrayal, and her disdain of self-pity lighten the shadow of tragedy and give the reader a true sense of values that he may carry over into his own life.

With the opening lines of the book one passes, as through a door that shuts out the world behind him, into a realm of light, color, beauty. The author paints two vivid pictures: There is a room glowing with a harmonious blending of tints under soft light. There is a May landscape, where brilliant sunlight flings its radiance over hill and tree and flower. Then, abruptly, the questions, "What if light should vanish from that room, never to return? What if a somber cloud should hang forever over that glory of spring?" It is the answer to these questions that occupies the remainder of the book.

Mrs. Bretz's husband was a busy New York doctor; and so, when they decided to buy a country place in New Jersey, it was Mrs. Bretz who set herself the task of learning how to run a farm intelligently. She studied at Columbia University and read widely on subjects that offered help in her new venture. This practical and thorough way of dealing with a situation is characteristic of her, and is perhaps the secret of much that she has accomplished. Thus equipped, she worked joyously on her small farm to produce the beauty and fruitfulness for which she had planned. Each night she poured into the sympathetic ear of her husband the story of the day's triumphs. In this new life she found scope for every power of body and mind and she delighted in their use. . . .

And then there came a day when, without warning, she crumpled to the ground, the strength gone from her body. Weary months of pain, helplessness, and uncertainty followed. Then the words, "You cannot go back to your farm. You are blind."

Her reply gives another glimpse into the depths of her nature: "Thank you, doctor. That must have been hard to say."

By degrees, long before physical strength returned, the valiant spirit that had studied to win beauty from the soil was measuring the possibilities of the days ahead that seemed so barren. Slowly but surely, aided by the devotion of her husband, she found a solution for one problem after another.

And then one morning, just when the need of his tenderness and understanding seemed greatest, Dr. Bretz did not awaken from sleep. Yet for Alice Bretz life must still be lived, and somehow she found courage to meet the necessity. Just how she accomplished this adjustment, gathering up, one by one, the threads that make up the fabric of a normal life, filled with wholesome interests, is the real story, the story that the reader will remember.

There is not a dull paragraph in the twelve chapters of this fascinating book. The author never becomes technical. When something must be explained, as the construction of the braille alphabet or the operation of the Talk-

ing Book, she gives the information in a few clear sentences. She passes easily from the details of a shopping trip or a luncheon to a thought-provoking discussion of the relation, as she sees it, between voice and character or a keen analysis of the difference between touch and sight reading in its bearing upon literary criticism. One may not always agree with her—but he wants to keep on reading.

From almost every page gleams the humor that is one of the book's greatest charms. It sometimes claims a paragraph, and again appears in the elfish twinkle of a single word in an otherwise serious sentence. In describing her first walks after her loss of sight, Mrs. Bretz says: "Gutters, I discovered, are not only unfriendly, they can be absolutely vicious. A gutter is a delusion, a snare, and a number of other things, all of which are unpleasant. I would not feel justified to write a character reference for a single gutter in New York City."

Much of the last chapter is devoted to the part played by religion in the life of the author. As clearly and confidently as she has set down the difficulties and successes of her mental and physical readjustments she gives utterance to the spiritual convictions that have sustained her. "My faith," she says, "is simple and sure." Her words are like the mellow tones of Sabbath bells, marking a pause in which the soul may look back over the days that have passed and gather fresh courage for those that lie ahead. "The stony path is narrow," Alice Bretz tells us, "but that brings the wayside flowers closer and their fragrance helps me on my way."

It is hard to imagine a person for whom *I Begin Again* will not hold an appeal. The casual reader cannot fail to enjoy its easy style, its sparkling wit, and the story that it tells. To the thoughtful mind it offers a stimulating challenge as it touches in turn literature, music, human relations, and psychological processes. It will find a place in the hearts of all who have known struggle, who honor courage, and who love laughter.

Talking Book Lessons

THE Talking Book has embarked upon a new era of service in the projected extension of its usefulness to schools for the blind. For some months Dr. Berthold Lowenfeld of the staff of the American Foundation for the Blind, and the sound engineers of the Talking Book department have been jointly working to establish the Talking Book in a new role. The result to date makes the adult listener wish himself a child at school again. In tangible form the work so far has produced Talking Book records with alternating bands of sound and silence. The sound band, when it reads itself aloud, projects a short lesson. Sometimes this lesson comes from the disc in dramatic form, sometimes as a story told with sound effects, sometimes as a straight narrative. When each lesson ends, the band of silence follows, and in that interval the instructor's test questions on the recorded lesson are given to the young blind listeners.

Each band of sound has been recorded for a very definite purpose. In one instance, the lesson tests the child's powers of observation. It is a visit to a sawmill. The narrator tells what the seeing child would see on such a visit, and the record tells, with its rasp of saws and buzz of machinery, what the seeing and the blind child both hear. The illusion produced is lifelike and almost perfect. All it needs to complete it is the smell of raw lumber and fresh sawdust combined with the acrid odor of oil. The Talking Book has yet to adventure into smells.

Another sound band tells in dramatic form a kindly anecdote of the life of Oliver Goldsmith, and still another, also in dramatic form, gives information on Iceland and its hot springs. There is a lesson to test the child's emotional response, another which has to do with the escape and capture of a canary and aims to test the blind child's understanding.

The discs compiled so far are gauged to the attention-span of grades 3 and 4. By means of data already available the instructor can compare the answers which the blind children

make with those made by seeing children on the basis of the same set of tests. The efficacy of this new method of instruction is now being tested in a number of schools for the young blind.

The attention-getting qualities of these Talking Book lessons cannot be too greatly stressed. They take advantage of the fact that these books are written in sound rather than in inkprint, and in that range give a variety of voices, inflections and effects impossible to achieve in the ordinary classroom without a dramatic cast or a prop-room with stage noises.

In these Talking Book records listening and learning go hand in hand, and it will be interesting to watch the results achieved through this novel method of recorded instruction.—F. Fraser Bond.

(*Continued from page 65*)

It is to be hoped that this change will mark the beginning of a new stage in her development. This case study and the illustrations accompanying it should help to convince teachers of the pedagogical importance of this kind of creative activity in schools for the blind and deaf-blind.

(*Continued from page 67*)

method, the pupil's comprehension of the model is checked.

After the models have been seen, the hypotheses formulated at the beginning of the unit are re-examined in the light of the additional information gained from the study of the models. In cases where doubt still exists regarding the validity of the conclusions obtained, additional information from a review of the available literature is presented to the class by the pupils or by the instructor. Throughout the course, the pupils are encouraged first to formulate a theory and then to check it before accepting it as a fact.

(The writers are indebted to Dr. R. S. French, Superintendent of the California School for the Blind, for administrative assistance and for personal encouragement in the work.)

Some Arithmetic Aids

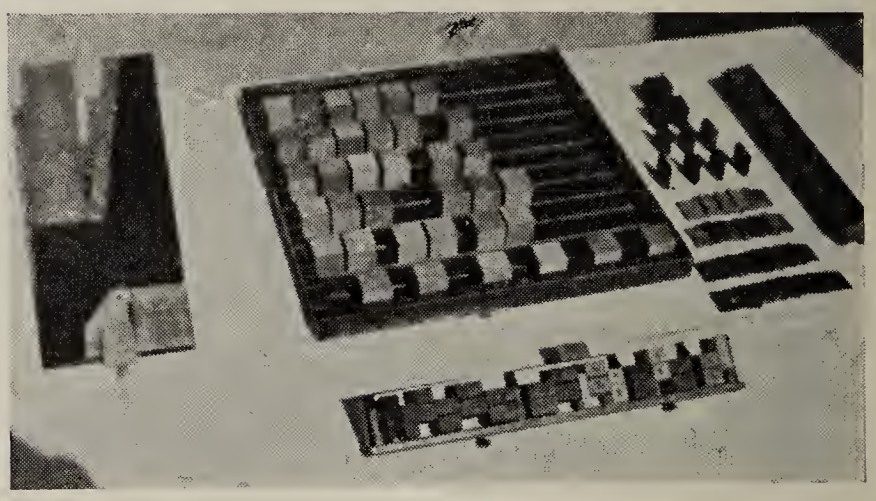
Elizabeth Schroder

At the California School for the Blind, Mr. James A. Wellington has conceived and worked out a variety of objective material that is proving invaluable to the teachers in building up in the children's minds clear concepts in mathematics and geography.

This material, though designed for the visually handicapped, can be used with equal success by seeing children.

The recessed board in the illustration is divided by raised parallel lines into strips one inch wide, and equipped with one-inch cubes. This board can be used as play material in the kindergarten and lower grades to develop number sense informally. Later addition, subtraction, multiplication, division and simple fractions can be taught objectively.

The inch cube to the right is used as a unit to illustrate the division of wholes into halves, thirds, fourths, fifths, sixths, eighths and sixteenths.



Arithmetic Aids

Below is a board divided into one, two, three and four-inch spaces, respectively. The "unit" block is a one-inch cube. Fractional parts have a one-inch-square face, and a thickness equal to the fraction of an inch which they represent.

Combinations such as $\frac{3}{8} + \frac{3}{8} = \frac{3}{4}$; $\frac{3}{8} + 3/16 + 3/16 = \frac{3}{4}$; $\frac{1}{2} + \frac{1}{4} = \frac{3}{4}$ may be made and compared with a three-quarter-inch block.

Interest is created and maintained, and a

(*Continued on page 79*)

Michigan School Offers New Plan for Training in Home Economics

Lola E. Bloss

The first program of its kind in any school for the blind in the United States is being offered this year by the home economics department at the Michigan School for the Blind where the home arts classes

Home "Ec" Activities

have now been placed under the direction of the State Board of Control for Vocational Education. The principal feature of this new project is the homemaking cottage, a "practice house" adjacent to the campus, where the girls live while completing their home economics training, and where they are permitted to carry out summer projects such as gardening, preserving and canning, under the supervision of their teachers. Instead of attempting these summertime activities in their own homes as public school students are obliged to do, the Michigan pupils have the advantage of continuing their studies in the practice house, with the benefit of expert guidance.

A large brick house, conveniently located across the street from the school, was rented for this new program. The students themselves took part in redecorating and furnishing the cottage, first reading magazine articles which would suggest ideas that might be carried out, and then visiting stores and shops in search of furniture and fabrics. The first floor of the house comprises a kitchen, dining room, living room and house mother's room; on the second floor are sleeping rooms and a guest room. Some of the furniture, including many of the chairs, was made by boys in the handcraft department at the school, while other unpainted pieces were decorated by the girls. The handcraft students also provided handmade rugs and fabrics from their looms. The girls selected wallpaper, paint, woodwork finishes, and draperies in keeping with carefully planned color schemes.

Maple Lodge, as the practice house is called, has a staff consisting of a housekeeper, assistant housekeeper, laundress, assistant laundress, cook and assistant cook, different

Maple Lodgers

girls being chosen for these positions each week in order that all of them may have opportunities to learn every phase of homemak-

(*Continued on page 79*)

Our Bookshelf

KATHRYN E. MAXFIELD, PH.D.

"CHILDREN are still fresh and close to feelings and experiences. Their senses are not dulled, but are sharp and keenly perceptive. As teachers, we should be challenged to stimulate and preserve this clarity by providing rich and varied opportunities for learning through direct and vivid experiences. We need to brighten our own language with fresh images. We need to listen more sharply, and refurbish our dulled adult sensory equipment with the clarity of young children's images. We need first to become aware ourselves of the learning opportunities in direct experience, and then to provide for expression of these experiences in play and language that is not utilitarian but vivid and shining as the clear eyes of childhood—these are the responsibilities of teachers of young children today."

That paragraph closes an article by Jessie Stanton and Evelyn Beyer called "Firsthand Experiences and Sensory Learning." (*Childhood Education,* Vol. 16, No. 2, Oct. 1939, p. 56. Single copy, 30c. 1201 Sixteenth Street, N.W., Washington, D. C.) Attention is called to the value of an ever-recurring check on the keenness and effectiveness of one's observation of the environment. Constant re-education is even more important for educators of the visually handicapped than it is for those who guide fully seeing children—to notice the first green of spring on a bush which is too far from the playground for a young myopic nature lover to locate without guidance, to appreciate the value of the sturdy candy box and the empty spools which can be turned into a crib for her doll by six-year-old Mary, to be aware of the difference in sound and "feel" between the new concrete sidewalk and the old uneven brick walk by the garden.

The habit of close observation *can* become a vice if it leads to the mere cataloging of things without due appreciation of their place in some larger unit of the environment. However, if used for the purpose of helping children to integrate their experiences on a meaningful level, careful observation cannot but enrich the lives of both teacher and pupil.

This issue of *Childhood Education* has as its theme *sensory experiences* and it makes very real the seeing child's need for guidance and encouragement with regard to them. The article just mentioned tells the following of a brilliant nine-year-old boy. A teacher asked him, "If you were riding horseback, could you cross a state boundary?" "Certainly," said the boy, "if the horse was a good jumper." No blind boy could surpass that, but almost any blind child of that age would make many such mistakes to the seeing child's one because of his more limited objective experience.

Another article in the same magazine, by Miss Ellen M. Olsen, on "Nature Experiences and Sensory Learning" (p. 56), points out to teachers of the seeing how much their pupils can learn through feeling, tasting, smelling and hearing. What she has to say applies also to visually handicapped children. For instance, this: "For a child, the experience need not necessarily be a rapturous or a beautiful one. The taste of a dandelion stem as it curls in the mouth, the slippery feel of spider-wort when picked, the stale bitterness of burdock —these do not deter a child from experimenting with their feels and smells." Or this: "Bare knees in a bed of cool, velvety moss, palms down, cheek feeling the texture—an unforgettable acquaintance with moss; encircling a birch tree with both arms, smoothing the grain of cherry bark, trying fingers in the rough grooves of the poplar, make for a useful acquaintance with trees. Tasting sorrel, clover, nasturtium or watercress supplies infinite satisfaction."

In the January, 1940, *Journal of Exceptional*

(*Continued on page 80*)

Dr. Allen Says:

How The Glover Family Kept Well

In a recent call upon a former matron of Glover cottage at Perkins, I said: "Miss Bartlett, you made a record of never having an illness in your family of upper primary girls until your last year when a case of scarlet fever was brought you from a girl's home. How did you manage it?"

"Vegetables," she replied, "chiefly vegetables. All my life I have cared for children and having noticed that eating plenty of vegetables kept their systems in good order, I put two or three kinds on every dinner menu. My faithful Nora was my ideal of a cook; all her dishes were appetizing, and we practiced the doctrine of the clean plate.

"But it wasn't only what we ate that kept us well; it was also the conditions under which we ate, particularly making the mouth do its full share in the process of digestion. We took ample time for meals; and dining with our girls as we six grown ups did, we set the example which controlled. Any necessary disciplining we carried out at other times and places, thus keeping meal-time pleasantly social. Indeed, I believe the togetherness there of teacher and taught to be the most valuable feature of the family system for promising children.

"Another important feature is having the matron looked up to as head of her household. We were responsible solely to the director and to our own consciences. I was not only my own dietitian but also first aid nurse, rarely having to summon the institution nurse or doctor. Though my house had its quiet suite, we used it for guests, since keeping tab on my girls, as I did, I checked every cold or other incipient ailment at my medicine cabinet. My assistant and I were up and about when the girls took their morning wake-up showers; and evenings, after all were in bed, we visited each for a few words of good night. We were fond of our charges and naturally did our best to merit their confidence. The house atmosphere was very sweet."

"True," I acknowledged; "for although one of the Lady Visitors intimated to me that your girls didn't dare be ill, I recall this very Visitor's seeing to it that your pension was a proper one."

"Well, these ladies were certainly appreciative," Miss Bartlett continued, "—often telling me that no Perkins house was more attractive than Glover, and no pupils more rosy-cheeked or better mannered.

"Quite as wholesome and tonic, perhaps, as the girls' meals was their regular exercise in the open air. All went out for several longer or shorter periods daily when possible, and they were not afraid to bundle up if the weather demanded it. Their cloakroom was hard by the exit into the covered cloisters where I required them to begin each day with a fifteen minute walk before breakfast; and their play cloisters opened down into the Glover playgrounds where they coasted in winter, and roller skated at all seasons on their saucer-shaped rink. Many had individual gardens.

"Since I love beautiful surroundings our living room and stair hall were always colorful. The girls loved to help decorate them. We had flowers whenever they were obtainable, even in winter when we secured Forsythia branches which we forced into bloom.

"Indeed, our whole manner of living made for health of body and joy of spirit. I feel that the girls appreciated it all, because since my retirement many of those now in the upper school have come to see me here and have spoken of their delightful days at Glover. Yes, I consider the family plan as we carried it out at Jamaica Plain and at Watertown to be as ideal as any I can think of."

Playground Activity for the Blind Child

George Emanuele

Playground activity for the blind, in addition to creating a desirable outlet for pent-up energy, is especially important as a factor in the development of proper social attitudes. Many authorities, as the result of careful observation, believe that the fundamental urges, drives, desires and emotions, are intensified in persons who are handicapped by blindness. Therefore, the blind child should be given every opportunity to compete in games in which there is a possibility of his success, so that he may grow up with a normal share of initiative and self-confidence, generated by his participation in social and group activities. Group games, in particular, tend to diminish sensitiveness, a trait which, unless discouraged, may lead to neurotic abnormalities. Since the urge for activity is so intense in most growing children, the blind child should be encouraged to take part in suitable forms of group athletics in order that he may not feel excluded from the companionship of seeing persons. Organized games and the use of playground apparatus therefore offer excellent media of assistance to the handicapped in becoming integral and contributory factors in the social group.

A playground program for the elementary grades in a school for the blind should be planned so as to provide activities for each season of the year, and also should permit the use of as many different kinds of apparatus as possible. The equipment, however, must have sufficient durability to withstand the abuse that the blind child unintentionally gives it and must have proper safeguards to protect the child from injuries while the apparatus is in motion.

Before a blind child is permitted to take part in any physical education activity, the director must not fail to check the health report made by the school physician. All physical defects should be carefully considered because certain forms of planned exercise might be injurious in some cases. For example, blind children suffering from various types of spasticity must not participate in an activity that is too strenuous. The afflicted muscles of spastics are hyperirritable to stimuli, causing a coordinated response to be considerably delayed. For such children the playground director should arrange a program of progressive activities, bringing into use only one part of the body at a time. Games should be taught slowly, and should be of a type that does not occasion unnecessary noise and excitement. If his condition is extreme the epileptic child should not be permitted to climb or to use apparatus that is above ground level; he should also be protected from irritating conditions. The myopic boy should not indulge in strenuous activity that may intensify or aggravate existing visual deficiency.

At the New York Institute for the Education of the Blind I have observed playground activities for the visually handicapped carried on under conditions which have reduced injuries to an occasional burned knee or elbow, a bleeding nose or a bruised shin bone. When the children arrive on the playground they are immediately inspected by the director as to whether or not they are wearing proper clothing. Individual instructions are also given at this time. The children then disperse and occupy themselves with the different types of apparatus at their disposal. They are carefully supervised, however, for playground rules must be strictly enforced and rigidly adhered to at all times inasmuch as the majority of the rules are for the purpose of preventing injuries. During the course of the recreation period the director usually plans some organized activity suitable to the season.

Roller skating is popular throughout the year and is an excellent sport for the visually handicapped because it not only develops mus-

cular coordination but gives clear ideas of distance, sound and timing, thereby lessening the hesitating awkwardness so characteristic of the blind. The procedure followed by the blind in learning to skate is similar to that used by the seeing. In orienting themselves to the skating area the visually handicapped make considerable use of the lines dividing the cement blocks in the pavements and also of the sounds which vibrate from the walls of buildings. Through a process of trial and error they locate the margins of the rink and thereafter maintain a distance of two to three feet from them. Banking the margin of a rink tends to reduce the possibility of injuries resulting from overestimating distance and going out of the skating area. It is also an aid to the blind child with defective hearing, which is one of the major causes of slow orientation. In skating, as in many other activities, the children overcome lack of confidence and fear by playing in small groups. Often a boy with some vision leads a group of blind boys, giving them an opportunity to acquire new muscular skills through developmental free play. This brings into action the large muscle groups, leading to neuromuscular growth and flexibility.

The roller skate may be utilized in the construction of many types of vehicles for use by the blind. An instructor at the New York Institute made a number of scooters with skate wheels, and several four-wheel wagons with steering gears. Some of the scooters were made with half of a skate at each end while others, with four wheels at each end, were used for learning purposes. Once the children had become familiar with the underlying principles of the scooter in use, they easily learned to operate the single skate ones which require careful handling and greater skill in balancing.

The four-wheel wagons were designed to accommodate three children, but if several children wished to use them a system was followed which gave each child a chance to push, ride and steer. A blind boy would usually be assisted in steering by a seeing child seated directly behind him. A truck wagon, large enough for use by six pupils at one time, also has been very popular on the Institute playground. It is equipped with automatic steering wheels in front. A seeing child, assisted by an instructor, steers, while three blind children push the wagon. Since it moves slowly it can be pushed by spastic children, thus affording them an opportunity to participate in a normal activity.

Bicycling is enjoyed by many of the boys at the Institute, and the bicycles, like other equipment, are sturdily constructed and designed so that no sharp metal points are exposed. In using any type of moving apparatus the blind children are warned against the danger of excessive speed which might cause injury to themselves and to others in their path.

During the winter season the sled is used to its fullest advantage. The more active children choose a coasting area which is free from obstacles. Others prefer the long sleds so that they can take turns in pulling them and riding. The metal corners of the sleds are padded with spliced rubber hose and rope in order to prevent injuries. The children also enjoy building forts and tunnels during the snowy season, and often spend entire play periods at this activity without loss of interest.

Since socialization of the blind child is actively promoted by organized group play, the children are encouraged to participate in games which have been adapted to meet their requirements. One of these, a game called "In the Water—Out of the Water," has been very popular among the primary children. Using the division in the cement pavement as a boundary the children stand on one side of the line and upon hearing the command "In the Water" they jump over the line, jumping back when the instructor says "Out of the Water." The object of the game is to have the children respond quickly until the command is repeated unexpectedly, catching some of them off guard and causing them to cross the line at the wrong time. They are permitted to locate the line from time to time but are en-

couraged to clear the margin when changing.

"Going to Jerusalem" is an indoor game, but may be played outdoors. A number of chairs are arranged in a straight line, facing in alternate directions. There is a chair for every player but one. The boys, having determined the location and position of the chairs, form a circle and march around them to the accompaniment of music. When the music stops suddenly each child is supposed to sit on a chair immediately. The one child who does not succeed in finding a chair is considered out of the game. Before the music starts again a chair is removed, so that eventually there are two children and one chair left. The one who succeeds in sitting on this chair when the music stops wins the game. It is advisable to use parlor chairs that are rounded at the corners although chances of injury are slight.

"Tug of War" is very popular among the boys and, with the exception of those boys who are not permitted to participate in strenuous games, all can play. Teams are selected to balance each other as nearly as possible. A heavy rope is used, thirty feet or more in length. Each side lines up about five feet from the center of the rope, and after all players have grasped the rope a signal is given, at which the tug of war begins. In order to win one team must pull its opponents over a designated center mark. Activity of this sort tends to develop alertness, fair play and unselfishness.

The game "Roll It Through" offers a fine opportunity to use a ball on the playground. Two teams of equal strength are chosen and face each other, about six feet distant. The children stand with their feet apart and with each foot touching a partner's. The object of the game is for a member of one team to roll the ball between the legs of an opponent on the opposite team. One point is counted for each score and the team totaling ten points is the winner. In order that the exact location of the opposing team may be known, the children should stand on parallel lines, with each child directly opposite his "enemy."

Experience has proved the game "Over and Under" to be equally popular among seeing and blind children. It can be played in the classroom or on the playground. Two teams of the same number of members are chosen; they form two lines, each boy standing about two feet behind the boy in front of him. The first person of each team passes a bean bag, eraser or ball over his head to the team mate behind him. This boy, second in line, passes the object between his legs to the third member who is behind him. This alternating method continues until the last child in line receives the object, whereupon he walks quickly to the head of the line and starts the passing over again. Eventually the leader returns to the head of the group, and the team finishing first is the winner. The children are permitted to find their way to the head of the line by touching their opponents.

The game "Simon Says" has met with great favor, especially among the younger children. The desire for preeminence and leadership may be developed by giving each child an opportunity to lead the class in becoming *Simon*. The children stand in calisthenic formation before a leader. When the leader says "Simon says, 'Raise arms overhead,' " they are required to follow the instructions. However, they must not obey when the leader says, "touch your toes." They may move their arms only when the command is prefaced by the words, "Simon says." Those forgetting the rule and making a false move are eliminated from the game.

The joy of achievement is especially rewarding when a child succeeds in learning how to catch a ball. Fear and lack of confidence may be overcome by persuasive suggestions such as telling the child to "try to catch the ball and then we will play the game you like." First the child is instructed to hold his arms bent, with elbows close to his side. The hands are held palms up, fingers spread apart and cupped, and the inside edges of the hands touching. To start, the teacher "loops" the ball from a distance of one foot, then gradually increases the space. The child is then taught

to loop the ball back to the instructor. The problems of learning how to throw and catch are the same for both blind and seeing children, but in the case of the former the teacher should encourage the pupil frequently, and must patiently continue the slow but progressive training.

Since the visually handicapped child is a normal child with physical limitations it is important that the playground director keep in mind the general aims of education. The Board of Education of the City of New York has established the following aims and objectives to help every child:

1. To develop a sound body and normal mental attitude.
2. To understand and practice desirable social relationships.
3. To appreciate and desire worth-while activities.
4. To discover and develop his own desirable aptitudes.
5. To cultivate the habit of critical thinking.
6. To gain command of the common integrating knowledge and skills.

The specific educational aims to which activities in the gym and on the playground contribute include health, social efficiency, and culture, thus providing an indirect approach to the social and physical adjustment of the visually handicapped.

The Teachers Forum

for

Instructors of Blind Children

Address all communications to

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15 West 16th Street

New York, New York

The Editor will not be responsible for opinions expressed in signed articles

MARCH, 1940

(*Continued from page 69*)

include floriculture and landscape gardening. Floriculture work will be done outdoors and in the greenhouse. Landscape gardening will be done on our campus and at the home economics practice house across the street. After the boys gain some experience we hope to secure jobs for them in Lansing where they may do some landscape work for private families for pay.

Each of the three courses has five 90-minute periods a week devoted to it. In addition there is a conference period in which boys may come to the instructor with their individual problems.

Of the future, time alone will tell. Business methods will be applied to farming. The boys will keep records of their projects, including costs, receipts, and time devoted to various phases of the work. In time they will know from experience just what they can expect along this line and we shall know how valuable such training is to them.

(Questions regarding the Smith-Hughes setup will be answered gladly if addressed to the superintendent or the teacher, Mr. Arthur Delamarter.)

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tangible appreciation of size and proportion acquired unconsciously.

To the left is a very ingenious gauge by means of which the child can test the size of the fractional part with which he is working.

(*Continued from page 73*)

ing. In addition to the usual daily household tasks including planning, preparing and serving meals, they also devote considerable time to needlework, hemming linens as well as designing and making novel luncheon and breakfast sets for use in the cottage. Starting with simple sewing they gradually learn more intricate forms and finally become proficient in designing and making their own clothes.

In order to carry out the summer projects without depriving the students of their entire vacation, group schedules have been arranged.

One group returns to the practice house during the first two weeks in July, and the second group continues the work during the succeeding two weeks. The summer activities center about the canning and preserving of fruits and vegetables which are used in the preparation of menus for the foods courses during the winter.

Last season the nursery school for blind babies was in session during the time when the first group of girls was at Maple Lodge. This school is conducted primarily for the benefit of the mothers of the handicapped babies, but gave each home economics student an opportunity to select one child to observe and assist during play hours.

It is believed that the unusual training secured in the new practice house will enable the blind students to become expert homemakers, thus preparing them to assume an important and helpful role within their own family group.

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Children there is a good article by Mr. O. J. Hill, Supervisor of Classes in the Ohio School for the Blind, called "Another Beam of Light Through the Darkness." Appearing originally in THE TEACHERS FORUM for March, 1939, it is accompanied by interesting illustrations. It describes a large scale and worth-while model making W.P.A. project apparently similar to the one reported by Mr. Edward J. Waterhouse in his excellent article, "Educational Models at Perkins Institution" in the October, 1938, *Outlook for the Blind*.

From the point of view of the general education of visually handicapped children the use of models is excellent provided that the teacher realizes the importance of coordinating the presentation of those models with as much direct experience with real objects as it is possible for each pupil to obtain. That is, the handling of models cannot take the place of such an immediate and sensory experience with the environment as is discussed in the *Childhood Education* articles.

FROM TIME to time articles are submitted for publication in THE TEACHERS FORUM which are supplemented by photographs which are necessary to the complete presentation of the subject. Since several of these have accumulated we are again issuing an illustrated edition. The article by Viktor Lowenfeld interestingly presents a careful study of the depiction by a deaf-blind child of definite new concepts. The two articles in regard to visual aids in the California school will no doubt prove stimulating and helpful to many teachers. The outstanding work in agriculture and home economics being done at the Michigan school with the assistance of the federal government emphasizes the advantages of having such work included under the Smith-Hughes Act in other schools for the blind.

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THE Teachers Forum

FOR INSTRUCTORS OF BLIND CHILDREN

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The Future of Piano Tuning in Schools for the Blind

Emil B. Fries

Vocational training in schools for the blind, during the past ten years, has been marked by a decrease in interest in piano tuning as a profession for the visually handicapped. This noticeable apathy toward a subject which for nearly a century occupied a place of great importance in the curriculum of blind students, is shared by teachers and superintendents as well as by the pupils themselves. In recent months some schools have even considered discontinuing the teaching of piano tuning entirely, feeling that it has little to offer the blind in a field dominated by the radio, and beset by economic difficulties.

Those best qualified to consider the future of piano tuning in schools for the blind are the successful tuners and the instructors of tuning. If they cannot show ample cause for continuing the teaching of their profession, they are not in a position to criticize administration policies which react to the detriment of the tuning departments. The Washington State School for the Blind has maintained an excellent piano tuning and service department for many years, and this was further improved during the depression by the assignment of an instructor to devote full time to that course. Due to the general success of our graduates, even during the years of economic instability, we not only feel justified in recommending our program to other schools but urge that an equally effective program be adopted by other institutions for the blind before blind piano tuners fall into general disfavor. I have been urged by several persons to prepare this analysis of the subject from the point of view of both the independent tuner and the instructor, in the hope that it will arouse school administrators to a full realization of the dangers involved in the present situation.

For a comprehensive appraisal of piano tuning as a profession for the blind and the wisdom of teaching it in our schools, we must study it from four different angles. First, does piano tuning offer any measure of secure livelihood to the well-trained blind tuner? Second, do we carefully select students whose qualifications will enable them to become successful tuners? Third, has the business of tuning changed in the last ten years along with the change in general merchandising and business methods? Fourth, are we going to abandon tuning as a profession for the blind or find a solution for present problems?

An intelligent analysis of the present status of piano tuning in schools for the blind must include a résumé of the history of the piano business, as well as that of tuning, and their relation to trends in modern education. The piano industry, as we know it, is only a little more than a hundred years old. Piano tuning as a profession for blind men is also a hundred years old, having been discovered in 1830 by Claude Montel, a sightless student at the Paris Institute for the Blind. Thereafter piano tuning was taught as a profession for the blind in Europe and was introduced in this country by Dr. Samuel Gridley Howe.

The rapid growth of the piano industry between 1850 and 1900 increased the demand for skilled workmen, particularly tuners. Piano manufacturers and retail dealers were quick to recognize the worth of well-trained blind tuners. Nearly every school for the blind in this country attempted to meet this labor demand by stressing piano tuning as the dominant course in vocational training. Just as the piano industry was geared in its heyday to the making and selling of pianos rather than to their upkeep, so too, most schools for the blind trained men mainly to

work in factories and stores. In most cases the blind workmen tuned the pianos before they were shipped, while the final regulating of the instruments was handled by seeing workers. Although a few blind men did become successful in repairing instruments, most of those without sight preferred to do tuning only, a task which they could perform with greater skill than many of their seeing competitors.

By 1910 4.4 per cent of the employed blind were engaged in tuning. The piano industry had reached its peak two years earlier, in 1908, with a production of nearly 400,000 instruments. The annual output remained close to that figure until the market reached the point of saturation in 1924, when the industry produced 355,554 pianos, half of which were players and reproducers. The following year the industry began its "toboggan slide" with a 25 per cent decrease in factory output. By 1932 the player and reproducer had been eliminated entirely, and piano production had reached the dismal depths of only 27,274 instruments. In connection with this low production, it should be noted that in 1926 there were approximately 96 piano factories in operation, and by 1937 only 33 remained. This alarming decline in the piano industry can be attributed to the advent of the radio, the point of saturation in the piano market, and particularly to the ramifying effects of the world-wide depression. The unemployment of hundreds of tuners, both blind and seeing, followed the decrease in sales.

The immediate effect of the radio on the piano industry and tuning was demoralizing. It made the player piano obsolete, and when it is considered that the player comprised more than half the sales, its sudden abandonment was almost ruinous to the business. In the late 20's and early 30's many tuners became victims of the popular belief that the radio would replace the piano to such an extent that they might as well seek other types of employment. This same defeatist attitude prevailed in nearly every school for the blind with the result that tuning was either neglected or dropped from the curriculum.

The more discerning tuners and dealers, however, welcomed the radio in the same spirit with which their predecessors received the phonograph a generation earlier. They could visualize the radio as an instrument which would stimulate widespread interest in music, and bring good classical music to a public that had been acquainted only with popular tunes. Their belief was entirely justified, for people soon learned that the radio could not replace the piano as a means of individual expression. Consequently, the wide variety of music, from the poorest to the best, which reached listeners over the air, created a strong desire to duplicate the professional performances through the medium of some musical instrument in the home. There was a notable increase of interest among children, too, and the piano was restored to a new permanent place in the schools as well as the homes. The trend toward streamlined design which prevailed throughout the country also played an important part in increasing piano sales when it was found that the modern instruments were of a size and type that would harmonize with the furnishings of a small apartment or home. These various factors combined to stabilize the piano industry to such a degree that after 1932 sales began to show a steady upward trend which has continued to date. In 1937 production reached 106,000 pianos, and in December, 1938, 11,800 were shipped, representing the largest shipment for a single month since 1930. While these figures show that the industry has made a remarkable recovery since the depression, there is little reason to believe that it will ever approximate its peak of the early 20's.

It is interesting to note that, while the sales of pianos were steadily declining during the late 20's, the piano service business, where it was intelligently managed, was expanding. Lyon and Healy, who operate an extensive piano service department, reported that 1928 was the best year in their successful history of 65 years of servicing business.

We do not know the exact number of people studying piano but we do know that there is a growing interest in music at present. We know that 2,179,416 high school students play in bands; that 14,000,000 people play some musical instrument; and that there are more children studying music, and more pianos in use now than at any other time in our history. These trends have a definite meaning for the tuners already in the field, but are of even greater importance to the schools that are training young students.

Those of us who are in direct contact with the music industry know that there is business to be secured in servicing pianos in the home, a fact which is of vital importance since factories will never again employ great numbers of tuners, and since pianos already in homes will require more and more servicing as the years pass. *The Tuners Journal,* the official organ of The National Association of Piano Tuners, reported in July, 1931 that we had approximately 4,000 tuners, with an average income of $2,000 per year. The more successful service men earned from $3,000 to $5,000. At present it is estimated that we have a maximum of only 3,000 tuners and approximately 12,000,000 pianos in use. These are actual figures in a profession which is being decried as hopeless and overcrowded. Here is a record which shows what one independent, blind tuner has done in a field where many fear they will be unable to secure a livelihood. From 1923 to 1929 his gross annual earnings grew to $3,900 or $325 per month. By 1933 his income had dropped to $150 per month and in 1934 reached $175. During the last three years his earnings have averaged between $238 and $250 per month, showing the need for piano service in homes.

Despite these achievements, the increase in piano sales, and the stimulation of interest in music, it is apparent that after one hundred years of experience in tuning, the blind now occupy a weaker position in the field than ever before. Is this condition unavoidable? Is it inherent in blindness, or is it due to the fact that those in charge of the training of blind tuners have not lived up to their responsibilities? In a recent unofficial survey of the tuning departments in twenty schools for the blind, a member of The National Association of Piano Tuners declared that the answer lies chiefly in the fact that most of the schools employ instructors who lack practical experience, and that the students are not allowed sufficient time for training. Unless an instructor has had actual experience gained through building up and maintaining a private clientele on a paying basis over a period of several years, he cannot teach his students to take their places in competition with seeing tuners who have had superior training. Moreover, the average seeing person who enters the profession receives his training after he has finished school, whereas the school for the blind requires the student to pursue his vocational studies while attempting to complete a regular high school course.

These are the facts which should be considered, not only by the tuners themselves, but by tuning instructors and superintendents of all of the schools for the blind which maintain tuning departments. In my opinion, we should adopt one of three policies: we should drop the subject entirely from the curriculum; we should offer it as a prevocational course; or, we should equip and staff the tuning department adequately and permit students to complete the course during a year or two of post-graduate training. In following the second or third policy it is important to remember that we must outline a course with exactness and not make false pretensions as to its adequacy. A course which covers less than half of the necessary training cannot, with any degree of honesty, be called anything but prevocational. I believe that if every school now teaching piano tuning had its course carefully examined by competent investigators, most of them would find that the greater percentage of instruction given the blind in this subject is on a prevocational basis and that there is no place where students can acquire additional training. This condition existed for a time in the Washing-

ton school until the faculty finally voted unanimously to permit deserving students to return for post-graduate study.

Under the present system, a tuning student is obliged to discontinue his course long before he has had sufficient training, merely because he has graduated from high school. Even in public high schools very few of the graduates who have specialized in typing and office work are competent to secure or hold positions in business fields. Most of them find it necessary to attend a business college or to continue their education in a university. Likewise, in schools for the blind the more promising students who have been trained in office work are enabled to secure scholarships for additional study. If this is true in the field of typing and office work, why is it not true in the field of piano service where the work to be done is many times more complex? Moreover, in actual experience, the blind tuner works at a greater disadvantage than the office employee. The typist and dictaphone operator come to the same building every day and know the particular arrangement of the office, whereas the tuner has to enter different homes where there is no uniform arrangement of furniture.

This, however, is not his greatest problem. To repair a piano and level a set of keys in the presence of skeptical strangers requires the skill and self-confidence that result only from adequate training. The blind tuner who has not had sufficient shop experience will usually do one of two things in the presence of the piano owner. He will tune the piano and overlook necessary repairing, or he may see the need of repairs but lack ability to do the work. If he does attempt the repairs, he may be unable to do the work well because of inferior skill and technical knowledge, thereby convincing the piano owner that a blind man can tune an instrument but cannot do the intricate repair work. The element of doubt in the mind of the owner is disastrous, not only for that particular tuner, but for all blind tuners, because the customer attributes his inefficiency to his blindness instead of to poor training and inexperience. Moreover, the blind tuner, having lost one customer is apt to secure less work in that neighborhood, and rightly so, for in the first case he would deprive the piano of necessary service, and in the second case might actually damage the instrument through his own lack of skill.

I have had ample opportunity to determine public opinion toward both blind and seeing tuners, because, although my own vision is only 10/100, my eyes are normal in appearance and it is assumed that I have average sight. Because of this, piano owners do not hesitate to ask my candid opinion of blind tuners, and if I would trust one with a good piano of my own. On such occasions I tell them of my own defective vision and that I learned tuning in a school for the blind, and cite the successes that some of my handicapped schoolmates and former students have achieved. For example, in the fall of 1924, one of our graduates, totally blind, settled in a community where there were already three seeing tuners. One of these left before the depression and another during the depression, and the third now devotes most of his time to selling life insurance. The blind tuner gradually acquired the bulk of the business in the community, not because of his handicap, but because he met the piano service needs more adequately than his seeing competitors without resorting to their tactics of price cutting. Another example of how a blind tuner has succeeded is shown in the case of one of our graduates who has worked steadily since 1929 in a large store in Portland, Oregon. This store has specialized in used pianos of all makes, including squares, and the tuner therefore has unusually difficult repair jobs. During the depression unemployed seeing tuners offered time and again to do the store work for a third less salary. In reply to my query about the unusual situation, the manager of the store said: "I have been in the piano business long enough to know a good tuner. When he has overhauled a piano, I know it is salable. Besides his ability to tune and overhaul pianos, he can play them

for customers. He is indispensable to this store." These are two instances in which blind men have been preeminently successful in their field, not because of any rare ability, but because they have the necessary qualifications. Teachers and administrators who believe that students can carry out a comprehensive training program while spending the major portion of their time in academic work are expecting the impossible. In discussing this matter of training with the manager of a large piano service department, he said candidly, "My firm operates a number of branch stores in four states where we employ several blind tuners. The best tuner in our main store is a man without sight. I have been called upon to examine scores of blind tuners and while a few of them are excellent, most of them are worthless because of lack of experience."

If we want prospective students to achieve such successes as these, we must give them the best training possible, not only in tuning but in piano repair work. The tuning department which does not acquaint its students with every phase of action work, regulating, repairing, and cleaning grands, uprights, and consoles, is preparing them for the pension instead of a career of successful piano service. A complete understanding of the term "piano service" and all that it implies, is of primary importance. Piano service means the proper treatment of any part that prevents a piano from performing at its maximum efficiency. If the action of an instrument is out of repair and regulation, thus spoiling its tone and touch, no amount of tuning will remedy the situation. Tuning will not improve tone deficiency caused by grooved or poorly spaced hammers, poor action regulation or bridge or sounding board defects, nor will it improve the touch of shallow or excessively dipped keys.

Many piano owners themselves do not realize the need for making certain adjustments and repairs, so the tuner must be trained to explain in non-technical language the nature of the work which is necessary in order that there will be no question about the fee. Some instructors who have had meager experience are apt to have little patience with such measurements as dip, travel, escapement, checking, and the point where dampers begin to move. Nevertheless, I know of instances where a mere sixty-fourth of an inch in correct regulation was sufficient to ease the touch of an instrument. In one case a teacher who called me in to tune her piano informed me that the touch was poor but that two tuners had told her the piano was made that way and the only alternative was to become accustomed to it. Later she wrote me a note, enclosing a $10 fee, and telling me that I had improved the worth of the piano at least $100. In another instance a woman asked me to tune her piano, although it had some keys that would not play at all. After I explained to her that tuning was useless and that a complete refelting job was necessary, she agreed to have the work done.

Tone and touch are the two most important qualities of a fine piano, but the possibility of dust and moths in an instrument concerns the average owner more than discordant tones. The student who does not learn to renovate a piano with a vacuum cleaner without marring the instrument is not prepared to meet all of the demands of customers. Piano keys that are not level and present a stairstep appearance impair tone and touch, and greatly mar the beauty of the instrument as well; however, an unskilled tuner will sometimes attribute this trouble to wear when the ravages of moths are really responsible. Over a period of fourteen years my records show that seven out of ten pianos need some amount of repairing and regulating, usually both, and nine out of ten need a thorough cleaning.

Here again we find that lack of training time is responsible for the failure to learn the task thoroughly. In the average course offered in schools for the blind the student usually has one period a day, and seldom more than two periods, for this work. In that length of time a student can probably acquire

sufficient knowledge to become a tuner, but cannot become a trained service man. While the particular aptitude and mechanical ability of the individual must be taken into consideration, nevertheless certain repair jobs cannot be completed within a brief class period. The reshaping of hammer heads for voicing is one of the most difficult repair tasks for the blind student to master, and for him it requires not merely a few hours, but weeks and sometimes even months, of patient painstaking work. The job of refelting an entire key bed and leveling the keys also requires hours of work. Regardless of how little manual dexterity a blind student has, he is expected, within a brief period, working only forty-five minutes a day, to learn a business that his seeing competitor has mastered with the aid of a special course. Forty-five minutes, in many cases, is only sufficient time in which to assemble tools and materials and begin the job; if, at that point, the student must discontinue his work and go to another class, it retards the learning process seriously because the train of thought relative to a particular technique is broken. It is not enough to have adequate laboratory equipment unless the students have time to master each task thoroughly. The boy who enters a school for the blind in his junior or senior year can, with post-graduate work, complete his academic work and the piano service course. However, the boy who enters school during the grades and continues on through high school, crowding the tuning course in with four years of academic study, might get a diploma as a tuner but this would have little if any practical value. If, as some instructors argue, the boy will probably not take up tuning as a profession after graduation, then the school is not justified in permitting him to take the course in the first place. No trade or profession is worth learning unless it is learned well, and the school that does not maintain a standard of this kind is simply providing a place for aimless tinkering instead of professional training. Moreover, few schools can permit their classes to be crowded with boys who are not studying seriously. Ten students comprise a full quota in my class and I find it impossible to do justice to more than that number. In Dr. William Brade White's special school of advanced tuning he will admit only a maximum of twelve students and he has an able assistant. I have found it a good policy to have a waiting list of boys who wish to take the course, and boys who enter high school before they are sixteen are not admitted to the class until they are older.

Another question to be considered is what type of student makes a successful piano service man? First, of course, he must have acquired a high degree of skill in tuning, repairing, regulating, and servicing pianos. To this training must be added personality, diplomacy, responsibility, general knowledge, business sense, and the ability to meet people and talk convincingly. These are minimum requirements, and it is not necessary to point out that the person without sight must be not only as well prepared, but better prepared then his seeing competitor.

A survey of the graduates of our tuning department shows that the most successful ones completed their course in their early twenties and were prepared to service as well as tune pianos. Thus age becomes another important factor. The National Association of Piano Tuners will not even consider a tuner eligible for membership who has not had five years of experience, and he must be twenty-three years old. When an instructor of tuning admits new students to his classes he should consider their ages in relation to their general ability. I believe it is contrary to the spirit and purpose of modern education to let boys in their early teens work daily at something as confining and monotonous as regular tuning. At that age they should be devoting more time to prevocational techniques, dramatics, and extracurricular activities for the general development of mechanical ability, personality and knowledge of work which will suit their individual aptitudes in adult life. In addition to academic

and mechanical ability, the student must have a fair sense of responsibility and judgment. That is a lot to expect from boys who are just entering high school at the age of fourteen or sixteen. Not only have I found it to be poor psychology to start training boys when they are too young, but I also believe it is detrimental to the profession to permit them to attempt work for which they are not ready. At the end of a four year high school course the average graduate of eighteen or twenty years does not have sufficient judgment and patience for careful technique.

The scholastic attainments of the prospective students should also be seriously considered. Records show that most successful tuners are high school graduates, and that those with some college training receive greater annual fees. Some graduates of schools for the blind have earned their entire college tuition by tuning. As a general rule the boy who cannot do good high school work is apt to be a failure in this profession. However, many excellent students have failed, not because of their mental incapacity, but because of unfortunate personalities. In training tuners it is well to keep in mind that Dunn and Bradstreet report that 81½ per cent of all business failures are due to personal faults, and since the bulk of piano servicing has been transferred from the factory to the home it is necessary that the tuner have the assurance and poise required to meet strangers easily. Moreover, the blind tuner must have an innate sense of neatness and order, for in unaccustomed surroundings he must be adept at making repairs without littering the room, or damaging fabrics or furnishings. In view of all these requirements it will be realized that the prevalent idea that tuning is a profession for the mediocre is a mistaken notion that has been extremely harmful so far as the blind are concerned.

In addition to these objectives, it is of equal importance to give the student some training and actual experience in the vital problem of selling his services to the public. While there is certain value to be derived from artificial problems, they are not worth much from an educational point of view for advanced students, who need an opportunity to test their knowledge and skill on actual piano conditions that will confront them in the home. The most interesting days in our shop are those when a piano is brought in for complete overhauling. Each student examines the instrument thoroughly, and the advanced pupils are required to give an estimate of needed services and the cost. Occasionally some of the advanced students accompany me to homes to assist with repairs, and each boy is paid for his work. This has a stimulating effect on the morale of the students, for they are enabled to gain some idea of the financial rewards which will be within their reach after graduation. In some cases capable students who are taking post-graduate work in tuning are permitted, during their last school year, to do service work for local dealers and teachers. This is usually very encouraging to the students particularly when they have an opportunity to tune and service a concert piano, thus proving their ability to work for the best musicians.

What is needed today to aid this profession for the blind is not more tuners, but more efficient ones who will measure up in every way to the standards of the National Association of Piano Tuners. If a school does not have the facilities to justify the expense of a thorough course, it would be preferable to offer a prevocational course only, possibly during the last two years of high school. Boys who show ability and interest in tuning should then be permitted to specialize in their study of piano servicing for a year or two in some other school which has adequate facilities for instruction. This should be a public high school or college, if possible, and the course should include public speaking and salesmanship, both of which build up confidence and assurance. Another solution is to offer a special course in a workshop for adults, where the working conditions and standards closely approach those in the actual business

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Dr. Allen Says:

The Blind Teas of London A Half Century and More Ago

Sir Francis Campbell liked to tell of his introduction to the adult blind of England, saying that one day in 1871, before making that country his home, he was taken to a tea given to about 100 blind persons at a mission hall in East London. The refreshments were good and plentiful—probably paid for by Lord Shaftesbury, who started the Indigent Blind Visiting Society. There was considerable speaking afterwards—that by the blind being of a pious, thank-you nature. "Mingling among these poor creatures, I questioned several," said Sir Francis, "and recall particularly one man's explaining that if they didn't tell the society how thankful they ought to be the teas might be discontinued. Such obvious cant disgusted me and I came away depressed in spirit. This blind tea was an introduction indeed, and a sad one to me."

When calling next day on Dr. Armitage, the wealthy blind philanthropist to whom he carried a letter of introduction, Sir Francis, then plain Mr. Campbell, related his rather distressing experience of the day before, and after that the teas were made more worthwhile—smaller groups were fed after all had been given a short talk on the advantages of learning to read braille, together with an introductory lesson by blind readers hired for the purpose.

The following has been condensed from an account by Miss Caroline Emery (later Mrs. Wallace Leonard), then a young American teacher at the Royal Normal College.

Picture the typical afternoon tea, a delightful social function in every well-to-do English home. But you cannot imagine what the old-time charitable tea at which I assisted back in 1889 was like. It was in a church vestry in Whitechapel where the Peoples' Palace is. Long tables had been set with rows of plates, each with its companion mug. Presently our guests began to arrive, the first a young man depending upon a cane. He was cleanly dressed and shaven but was innocent of collar or tie. After him came a ragged old man, his guide being a girl barefooted and hatless. When these had been seated, there entered an intelligent looking man carrying in his arms a tiny flaxen-haired child with the brightest of blue eyes, probably his granddaughter. Two sturdy workmen followed, noticeable only in that they were led by dogs wagging their tails as if welcoming the sniffed feast to come. Within ten minutes the forty or fifty places had been taken, whereupon grace was said, and the tea began.

Who were these guests? They were blind men, most of them elderly, the poorest of the poor, and very naturally hungry and thirsty. The main dish was tea, unlimited tea; and some drank eight or nine mugs of it. With this came buttered bread, sliced cold meat, plum cake, and individual mince pies; more of everything than they and their dogs could eat. Dr. Armitage, the provider and host, who was present, spoke kindly words of welcome. He knew something of each guest and held a list of the children who had brought them. With the invitation he had suggested that everybody bring a bag in which to carry home what was not eaten at the tea. Finally, calling the children in turn, he presented to each a wrapped package containing some pretty storybook as a reward for her service in guiding her blind relative; and when presenting the gift he spoke a few words of commendation and hope.

After a half hour of general conversation there was music, mostly singing by pupils from the college, after which these strange guests left as they had come, some led by children, some by their wives, and some by their dogs. And this was a typical London "blind tea."

Learning By Listening: A Review of Recent Achievements in Auditory Education

Berthold Lowenfeld, Ph.D.

The history of the education of the blind reveals a continuous struggle for the improvement of teaching methods and techniques. Its development has been marked by important milestones since the discovery that the blind were educable. Some of these were: the founding of the great European and American institutions; the introduction of braille reading, writing and musical notation; the development of tools for the teaching of mathematics and science; the introduction of special teaching methods; the differentiation between certain groups of blind children such as the partially-seeing, the mentally retarded, and the deaf-blind.

During this development teachers of the blind have followed the progress made in general education and adopted as well as adapted promising elements and trends in the field of public school teaching. But if we are to speak of "the history of the education of the blind" something specific must be cited, something that distinguishes our educational work and gives it a special character.

Since we are teaching blind children, this "something" must be dictated by the objective needs of our pupils resulting from their blindness. Therefore, the question arises: "What is the specific educational need of the blind child that justifies distinctive educational treatment?" The answer to this question may be summarized by defining the need of the blind child as that of "added stimulation." Seeing children bring into the classroom a variety of impressions and experiences which their surroundings offer. Their minds, open to the world at large, are flooded with pictures, sensations and concepts and it is the teacher's problem to utilize these for the advantageous development of the children in her group. Blind children present quite a different problem. Their enforced seclusion, remoteness, and natural tendency to egocentricity must be counteracted as much as possible by an education offering a plentiful supply of such material as is necessary for an adequate understanding of the surrounding world. A teacher of a class of blind children functions as a constant stimulator and "supply officer." It is, of course, important that the material presented to the children be deliberately chosen and prepared, for only then will it enlarge the limited range of the child's experiences and materially contribute to the enrichment of his personality.

Ever since Johann Amos Comenius, the great Czech pedagogue of the 17th century, in his *Orbis Pictus* started to make extensive use of pictures as a method of instruction, visual aids have become increasingly important, and modern teaching depends to a considerable extent upon this use of illustrations. Although visual education has been in the foreground, auditory education did not enter into the picture until recently when two inventions of particular interest to teachers of the blind came into use,—the radio and recordings. Both are new educational tools and it seems appropriate to review their application, their advantages and disadvantages, in order to determine their value for our purposes.

The contribution radio has to offer to teaching is summarized by Dr. I. Keith Tyler (*Education on the Air, Seventh Yearbook of the Institute for Education by Radio,* Ohio State University, Columbus, Ohio, 1936: The Use of Radio in the Classroom, pp. 240-250), under four heads:

1. *Timeliness.*—Textbooks quickly become obsolete and even current magazines lack the timeliness of the radio.

2. *Capacity of bridging the gap of space.*—The radio brings pupils into contact with the most remote and inaccessible experiences and events.

3. *Capacity for bringing authority direct to the pupils.*—Certain broadcasts, such as speeches, enable listeners to hear the voices of famous persons.

4. *Enrichment of emotional life.*—The best broadcast is that which appeals to both thinking and feeling, and the same is true of educational programs.

There are two ways in which broadcasting may be used in the classroom,—"direct teaching" and "integral enrichment." "Direct teaching over the radio is represented by that type of school broadcast in which a teaching broadcaster in the studio gives direct instruction to pupils in classrooms, presenting directions to be followed, asking questions, conducting tests and drills, and in large measure following a pattern of classroom teaching. . ." Cleveland and Rochester are using this method in which a master-teacher presents model lessons to all of the children in a given grade under the assumption that they "can benefit from a uniform curriculum taught at a uniform rate and in a standard pattern." It is quite obvious that this type of broadcasting, which is necessarily adapted to the needs and capabilities of seeing children, will not be entirely suitable for blind pupils.

The other type of educational radio presentation is designed to supplement and stimulate the teaching in the regular classes. Selected chapters in various subjects such as history, social sciences, nature study, etc., are offered, and it is the teacher's task to select these and make them an integral part of the teaching process. All of the larger networks offer such programs and they could certainly be used to advantage with classes of blind children.

Let us examine the opinions and attitudes of those directly concerned with the radio as an educational tool. R. R. Lowdermilk, co-editor of the *Ohio Radio Announcer,* (Bureau of Education and Research, Ohio State University, Columbus, Ohio, May, 1938), presents the following conclusions:

"Except for newscasts and special-feature broadcasts, such as talks by the President, the opening session of Congress, and the like, the majority of school broadcasts might be produced in recorded form instead of being broadcast on the air. If such a recorded-program service were made available to schools at a cost they could afford, not only would most of our present difficulties in program utilization be solved but several additional advantages would be gained.

"First, each broadcast could be preaudited by the teacher planning to use it so that appropriate study aids could be prepared in advance. Knowing, beforehand, exactly what topics were treated in the program, the teacher could not only prepare his class more carefully for listening, but he could also anticipate the possible effects of hearing the program in terms of pupil motivation, comprehension difficulties, and the like.

"Second, schools could be furnished in advance with syllabi covering each of the recorded-program series available for school use. This would enable each school more wisely to select the specific program series best adapted for supplementing instructional materials available locally.

"Third, each teacher would be able to repeat any given program whenever desirable. Thus, a program used to introduce a unit of study might again be used in summing up the work of the unit. Any program might also be repeated for the benefit of students who were absent at the time it was first presented.

"Fourth, it would materially facilitate the work of evaluating the outcomes of teaching for the teacher to be able to reaudit each program. Specific points of emphasis in radio programs may be missed at the time of broadcast, or they may have been forgotten by the time the teacher is ready to construct his tests for evaluating

a unit of work, but the use of recorded programs would obviate this difficulty."

It is, therefore, by no means accidental that increased activity is to be noticed in the field of educational recording. The plans of the Talking Book Education Project have already been reported in THE TEACHERS FORUM and their realization is well on the way. At this time I want to call the readers' attention to a number of new features in educational recording.

The World Book Company (Yonkers-on-Hudson, New York) has placed on the market a set of three records entitled *Then Came War: 1939*. The choice and arrangement of this twenty-five minute condensation of history is the work of Elmer Davis, noted radio commentator and authority on foreign affairs. He presents a dramatic narration of the events leading to the second World War with excerpts from many speeches and official documents including actual recording of the voices of Chamberlain, Daladier, and Hitler. *Then Came War: 1939* is suitable in both content and language difficulty for use at the secondary school level and up.

The C. P. MacGregor Company Educational Transcriptions (729 South Western Avenue, Hollywood, California) offer to schools some of radio's finest educational features in the fields of history, drama and stories for younger children. (Sixteen-inch records operating at 33 1/3 r. p. m.) "The historical and literary episodes are dramatically presented by some of the best known voices on the air today."

Studidisc (9 Rockefeller Plaza, New York, N. Y.) presents a record library designed especially for classroom use. (Twelve-inch records, 78 r. p. m.) The English Literature Series comprises recorded excerpts from famous writings in both prose and poetry. The United States History Series covers the period from 1760 to 1787 and the events leading up to the founding of American democracy.

Harper and Brothers (New York, N. Y.) have recently announced the publication of The Mercury Shakespeare, edited for reading and arranged for staging by Orson Welles and Roger Hill, accompanied by the Mercury Text Records, phonograph recordings for classroom use (twelve-inch records, 78 r.p.m.). The records offer a line by line dramatization of the play, with Orson Welles narrating the descriptive material of the stage directions parallel with the printed reading edition. The dual procedure of reading and listening is claimed to be a superior method of presentation. *The Merchant of Venice, Julius Caesar* and *Twelfth Night* are available in this edition.

In the recent production of musical records, which are improving in quality as well as increasing in quantity, two features seem especially noteworthy. Columbia calls a new series "Add-a-part" records. All but one part of a composition is recorded and the instrumentalist plays with the record to complete the ensemble. There are recordings of the finest chamber music with the first or second violin missing; others to which the piano or cello part has to be added. Chamber music selections from the great classics are rendered in authoritative readings by the eminent Rothschild ensemble. These records are especially recommended for use in our music departments because they offer to blind students a unique opportunity to enjoy chamber music and also to participate in a chamber music ensemble. The records enable the music student to study his own part in relation to the complete composition and to achieve correct tonal balance and style.

Finally, a recording of the Musical Masterpiece Series of R.C.A. Victor, *Peter and the Wolf* by Serge Prokofieff, as recorded by the Boston Symphony Orchestra under the direction of Serge Koussevitzky, is heartily recommended. In this orchestral fairy tale each character is represented by a different instrument in the orchestra—the bird by a flute, the duck by an oboe, the grandfather by a bassoon, etc., introducing a number of orchestral instruments to the listener in a charming and captivating manner. "Like all

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Our Bookshelf

KATHRYN E. MAXFIELD, PH.D.

A TIMELY experiment in the adaptation of test material for use with blind college aspirants is reported by Professor Carl C. Brigham of Princeton University in "The Scholastic Aptitude Test for the Blind." (*School and Society,* Vol. 51, No. 1308, Jan. 20, 1940, pp. 91-96). At last, there is an objective basis upon which students without sight may be chosen for college entrance, thanks to the initial interest of the New Jersey Commission for the Blind and the later cooperation of the College Entrance Examination Board and the American Foundation for the Blind. The adaptation has been so carefully made that there will be no question but that the blind student is being admitted on an equal basis with the seeing student. Previously this test, so extensively used in selecting students for major colleges, has been available for use only with the seeing.

Recently, Professor I. L. Kandel of Teachers College, Columbia University, expressed cogently yet humorously his reactions to the latest educational fads. (*School and Society,* Vol. 51, No. 1314, Mar. 2, 1940, pp. 283-284). Among other things, he says, "The man who seeks to paint a picture of the horrors of persecution and intolerance is not interested in humanity but has a market to win or protect somewhere. The lecturer from abroad is a paid emissary of his government, as you can discover by a small subscription to the privately circulated organs which have their own private and secret channels of information. Hence, it is essential to keep the mind so open that the brains are sometimes in danger of falling out."

Kandel's whole article is well worth enjoying. Obviously, he objects to having everything labelled indiscriminately as propaganda, an attitude that many of us can share. Propaganda techniques, like statistical techniques, can be used to cast opprobrium upon any belief, person, or action. Both propaganda and counter-propaganda can be misleading and the true educator is the one who can train his pupils to look beneath both labels for the underlying facts. However, an objective search for truth does not call for the type of open-mindedness to which Professor Kandel refers.

A recent copy of *The Torch* from the Ming Sum School for the Blind in Canton, China, tells of their unexpectedly happy Christmas. Just how unimportant material things can be in the production of happiness may be judged from the following quotation: "In the first place there was the problem of where, in a city of no stores, to purchase gifts for teachers and children. The Paak Hok Tung Refugee Camp gave one answer and an order was placed there for enough towels to be made to supply the entire school. Bars of soap left over from last year, toothbrushes conjured up from somewhere, oranges and cakes made full hands and pockets. One friend gave each person an envelope containing twenty cents worth of pennies (28 pennies) to be spent penny by penny for any dainties they might buy. Then one sunny morning the officers and men of the U.S.S. Mindanao sent the school a gift of fifty pounds of beef. This would have been a real treat even if the school had been having meat regularly, for there never was more delicious food than that real American beef."

To return to the subject of tests, the adaptation of the Otis-Orleans Standard Graduation Examination for Elementary Schools which was reported by Dr. Samuel P. Hayes in the November, 1939 issue of THE TEACHERS FORUM provides educators of the blind with an objective standard against which to check their judgment regarding a pupil's qualifications for admission to high school. At

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The Nursery School Project in Michigan

May Hammond

The Michigan School for the Blind, in the summer of 1937, launched a novel nursery school project which provided for the education of parents as well as their babies, and preparations are now being made for the fourth annual session of this new type of school which has met with such unusual success. After three seasons this plan to educate parents in methods of caring for their blind babies is definitely past the experimental stage, with provisions already being made to construct a nursery school building in order that the project may continue throughout the year.

It is generally agreed that the guidance of the preschool child in the field of education has been too long neglected. Now that the full significance of the first five years has been authoritatively established there has been some attempt to educate parents to cooperate with teachers in preparing the child for normal school life. Important as this preparation is for seeing children, it is of even greater importance for the visually handicapped. Without the understanding help of his parents during the first five years of his life, the blind child may never succeed in overcoming blindisms, even in adulthood. It is lack of home training, educators agree, that gives the kindergarten a child who is shy and dependent, and who must face his school years with the double handicap of physical blindness and a maladjusted personality.

For the purpose of helping the mother to assist her blind child in making proper adjustments during the early period when life habits are being formed, the Michigan project was organized for a summer session of four weeks. The staff comprises a social worker, nurse, teacher, oculist and physician, and accommodations are arranged so that the mother and her child can be together.

The tentative program for the first week provides for the general acquaintance of those enrolled and adjustment to the new environment. Also, during this period the children are given thorough physical examinations by the physician, and eye examinations by the school oculist or other specialists. The second and third weeks are devoted to constructive guidance concerning the mental and physical growth of the child. This includes posture, good walking habits, eating, self-help in dressing, general self-care, overcoming blindisms, and assistance in the more complicated problems of personality development, emotional stability and control, and social behavior. The fourth week is given over to finger plays for the babies, stories and story telling for those somewhat older, and parental instruction in the use of helpful books and magazines and in regard to story material for the growing child. Toward the close of the session some time is spent on a general review of all work covered during the four weeks.

A daily schedule which begins with breakfast at seven o'clock and ends with a five o'clock supper is maintained throughout the course. Immediately following breakfast the children and their mothers spend an hour outdoors, and usually take walks. From 8:30 to 9:30 the children are in nursery school without the mothers present. The next half hour is devoted to supervised play outdoors, and fruit juices are served to all. From ten to eleven o'clock the supervised play continues while the mothers are given instruction in child care and training. The dinner hour follows, and then a rest period. From two until three o'clock the mothers meet again to discuss problems of the blind, and to attend a class in Grade 1 braille. During the remainder of the afternoon they have the care of the children until supper time, after which there is another outdoor period for walks.

Certain social activities are arranged, including teas, birthday parties for the children, picnics and school movies. At least once during the four week period a sight-seeing trip is taken in the school bus.

During the past three summers twenty-eight mothers and their children have enrolled for the course. Six of the children have entered kindergarten, and three, at the normal age of six, are now in the first grade. It is hoped that with the aid of better home training the visually handicapped children will, in the future, be ready to enter kindergarten at the age of five years, free from blindisms.

The nursery project is conducted without expense to the parents, except the necessary cost of transportation to and from the school. Since many of the families have limited funds the entire course is planned so that it can be continued in the ordinary home environment. All equipment, including furniture and toys, is selected with this in view. Furnishings consist of such necessities as nursery chairs, high chairs, play pens and strollers; and the playthings are equally simple, such as cuddle toys, boxes of various sizes, blocks, beads, a sand box, a teeter totter, homemade steps and slides, and a junior jungle gym with a low swing and a horizontal bar.

One of the chief benefits to be derived from this summer school is the opportunity for discussion among the mothers of the handicapped children. In the average community, a blind child in a home creates unusual problems which the parents do not feel free to discuss with their acquaintances. At the nursery school the mothers are interested in a common situation, and under such circumstances they frequently form sympathetic friendships which last through the years. The mothers also acquire an attitude of trust toward the school, feeling that it will offer the very best assistance to their handicapped children. This sense of security is invaluable, not only to the parents themselves, but in its reflection in the lives of those whom they seek to educate.

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field. This also has the advantage of eliminating the older, post-graduate students who sometimes cause disciplinary problems in residential schools. If students from another state are to be admitted to those schools offering advanced training, it might be possible to arrange for an exchange of students, thus balancing the item of tuition. It might also be possible to secure assistance from the Bureau of Vocational Rehabilitation, in which event the federal government could require the training to measure up to certain uniform standards.

When business is dull and the future is not promising, the business man takes stock of his assets and liabilities and, on the basis of his findings, decides to liquidate his holdings entirely or to seek new ideas for rebuilding the failing trade. Every school for the blind that teaches piano tuning faces a similar situation today. There never has been a greater need for cooperation in establishing a constructive national program, for the attitude of the schools will eventually determine the maintenance or loss of an important profession for the blind.

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great fairy tales it is fresh and absorbing to all alert minds at any age, six or sixty."

The Record Discount Service of the American Foundation for the Blind would be of material assistance in the purchase of these records. Institutions and agencies for the blind may purchase both Victor and Columbia phonograph records, for their own use, at a discount of 33 1/3 per cent.

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this level it supplies a need similar to that met by the adaptation of the Scholastic Aptitude Test at the college entrance level. However, the results of any standard examinations for younger students should not be regarded as all-sufficient criteria in and of themselves. Often, they will need to be looked upon as one of a group of criteria.

John V. Armstrong: Pioneer Educator of the Blind

Elliott Stanley Ford

The name Armstrong, according to legend, was derived from a rather unique circumstance: an ancient king of Scotland had the misfortune of having his horse killed under him in battle; but Fairbairn, his alert armor-bearer, immediately grasped the king by the thigh and set him upon another horse. The king, in gratitude for this unusual service, very graciously rewarded the armor-bearer with valuable lands on the border and to perpetuate the memory of this gallant deed performed at such a crucial moment as well as the extraordinary manner in which it was performed, gave Fairbairn the appellation Armstrong "and assigned him for a crest an armed hand and arm grasping a leg in armor."

The history of the Armstrong family in Ireland dates back to 1689 when John Armstrong landed there with the Prince of Orange. He was later given a grant of land for his heroic services. Two of his sons, Malcolm and Archibald, fought with the Duke of Marlborough in Flanders; Malcolm was the father of James Armstrong, one of whose sons came over with the British forces under the command of Pakenham during the War of 1812, and was killed when Pakenham's troops were defeated by the Americans, led by Andrew Jackson, at the Battle of New Orleans. John, another son of James, was the father of William Armstrong who was born near Enniskillen, in the Province of Ulster. He and Margaret McCown were married and had four children: Frances Jane, John Valentine, Isabelle Margaret, and James. It is with the second of these children that this article is concerned.

William Armstrong was an officer in the king's army; and, because of his position moved about a great deal but always took his family with him. It was while he was in the Province of Connaught, at a small fishing village on the northwest coast of the island, near Bally Castle, County Mayo, that his son, John Valentine Armstrong, the sixth John in descent from the first who went to Ireland, was born in the year of 1832, on St. Valentine's Day, hence the middle name. From early childhood the father made a companion of his son, and they frequently took long walks together through the Mayo countryside. It was during these walks that the child learned to imitate the rhythmic step of his father which, together with a natural poise, gave him the bearing of a soldier throughout his adult life. It was these occasions too, which afforded the many experiences in nature study which so enriched the few years during which the boy had normal vision. At home, his education was acquired largely from his mother who, because the family moved about so much, acted as her children's teacher during their early years. In this home teaching the emphasis was on literature and especially poetry, the subjects in which his mother was most interested.

When John was about six years old he was walking down the village street one day when he came upon some boys of near his age who were amusing themselves by throwing stones in a vacant lot. He did not even know the boys, but he stopped to enter into the fun with them. For a while they all enjoyed the sport, until suddenly a stone, thrown wild, struck John in the eye, cutting the eyeball. This accident completely destroyed the vision of that eye. The ceaseless pain continued for months, and soon the sight of the other eye began to fail in sympathy. The worried parents tried every remedy known to them, but the vision continued to fade. The boy, regard-

less of the cold weather, would go to the ocean each morning for a dip, hoping that the salt water would prove beneficial to his injury. The leading physicians of Ireland and England did everything they could for him, but nothing seemed to check the gradual failure of his vision. The medical profession then knew very little about operating on the eye; therefore, the injured eyeball was not removed. The patient was not neglected but the doctors had not had sufficient experience in the treatment of eye injuries to know what to do to save the normal eye.

At last the parents decided that some improved method had to be tried or the child's vision would be completely lost. The belief that America had newer and perhaps better medical facilities led them to come to the United States to seek aid here. Such a trip meant considerable sacrifice on the part of the family, for John was only about ten then, there were two younger children in the family, and the father was obliged to resign his commission in the king's army in order to make the trip. Besides, there were the actual hardships and dangers of the voyage itself, for in 1842 sailing vessels required six weeks or more to cross the Atlantic.

The family finally landed on the eastern coast of the United States, and settled in New York where the leading physicians of the day were to be found. However, the eye treatment which they provided proved no more efficacious than that in Europe. So much time had elapsed since the accident that the failure of sight in the other eye was inevitable, and soon the family was informed that there was no chance of restoring even a slight amount of vision.

Because of this serious handicap, the boy's father realized the importance of special education in a school for the blind where the child could learn to substitute his tactual and auditory senses for his lost vision. Since the education of the other members of the family had to be considered, he could not afford a private tutor for the boy, and the common schools at that time made no provision for the teaching of blind children. However, the New York Institute for the Education of the Blind had been established in New York City and its accessibility enabled resident students from nearby to spend week-ends at their homes. It was this advantage, perhaps more than any other, that caused the Armstrongs to remain in the United States.

Mr. James F. Chamberlain of the Institute, one of America's leading educators of the blind at that time, became very much interested in John, and on October 2, 1843, he was enrolled at the school. He very quickly adjusted himself to his new environment. Very little is known concerning the details of his school life since the records kept at that time were not complete. In addition to literary work, which was his special interest, he took up music and learned to play nearly all of the musical instruments then in common use in this country.

Early in his school life, young John began to think of a profession. He knew that the task of earning a livelihood was not easy for a man without vision and he was the eldest son, which meant that, in accordance with the customs of the country, the responsibility of the family would rest upon him in the event of the death of his father. As he studied the situation the educational field especially appealed to him, for in that work he knew he would find opportunities to help other boys and girls who had been deprived of their eyesight. Music at that time seemed to be the most lucrative field in which the blind could compete with the seeing, so he prepared himself for a career as a music teacher, feeling that through this medium he could assist many blind persons to become self-supporting.

In 1852 his father died, leaving the family in rather poor though not destitute circumstances. John felt that he must discontinue his formal education and prepare to take the place of his father in supporting the family. Though he did not attend any other schools, he continued his education himself, hiring readers to read to him books that had not

been printed in raised characters. He had had excellent memory training, and was thereby enabled to retain a vast fund of information.

Upon the advice of friends, he left New York and went to Nashville, accompanied by his younger sister, Isabelle Margaret. During the winter and spring he taught music to individual students there. The following fall he obtained a position as teacher of piano in the Tennessee School for the Blind, where he taught for two years. He then went to Mississippi where he was private tutor for three years to a blind boy, the son of a plantation owner. He returned later to the Nashville school and spent a year there after which he accepted a more lucrative offer in the Texas School for the Blind at Austin.

While he was still at Austin war was declared between the North and the South, and shortly thereafter the Texas school was forced to close. Mr. Armstrong returned to Nashville, seeking the position he had left twice before, but there too the school for the blind was faced with serious difficulties. He decided to continue music teaching, giving individual lessons in Nashville, but he also devoted considerable time to Confederate war work. At that time the only organ in Nashville was in the Second Presbyterian Church, and Mr. Armstrong obtained permission to move it to the Grand Opera which was nearly four blocks distant. He moved it unaided and then gave a series of concerts, contributing the proceeds to aid crippled soldiers and to a Confederate hospital building fund.

After the war was over there was an attempt to reorganize the Tennessee School for the Blind, and this time the effort was fairly successful. Mr. Armstrong was again appointed teacher of music, and though he was provided with only one piano, he managed to give lessons and arrange practice periods for sixteen pupils in the school. Further development of the music department was slow because of lack of funds. There were far more applicants than could be taken; for several years Mr. Armstrong continued his work, endeavoring to give each child a chance to demonstrate his musical ability unless it was found that talent was entirely lacking, but it finally became necessary for the school officials to select for training only those pupils whose talent was most marked.

The school had been moved about from place to place in Nashville until 1873, when a permanent site was donated by Judge John M. Lea and Mrs. Lea. This was the once famous Claiborne residence, one of Nashville's fine old homes; considerable remodeling was done, and wings added in order to make it into a suitable school for the blind.

It was at this time, during the year of 1873, that Mr. Armstrong was married to Miss Sarah Elizabeth Stanhoff of Fredonia, New York, who had been a teacher in the Nashville public schools for several years. His mother and the other children had also settled in Nashville and lived near the school, but on January 9, 1880, his mother died.

The people of Nashville and the state heard very little about the department of music in the Tennessee school until the late eighties. In 1889 the first graduate in organ music gave a public recital. The same year the band made its first concert appearance. From that time on the department graduated at least one student each year, and most of the pupils became self-supporting.

The resignation of Superintendent David Lipscomb, Jr., created a vacancy that was difficult to fill, and in July, 1897, the trustees promoted Mr. Armstrong to that position. The superintendency had changed hands many times since he had been director of music, and during these years he had served as chief counsel to many of the younger men who were now on the school staff.

Shortly after his new appointment, on December 29, 1897, his wife died at the age of fifty-four years. A few years later, on August 31, 1903, Mr. Armstrong married again. His second wife, Miss Mary Rothrock, had been a teacher in the school, and was very much interested in the education of the blind.

During his first year as superintendent, Mr. Armstrong, at the request of the Board

of Trustees, wrote a "History and Prospectus of the Tennessee School for the Blind." This published work traced the education of the blind from its early beginnings in Europe, and was the first comprehensive piece of research of that type done in Tennessee.

When Mr. Armstrong assumed the duties of superintendent of the Tennessee School, he had a double task to perform: first, he tried to impress upon the blind students themselves the belief that they could be educated to fill many positions of profit and that their hands could be made to supplement their impaired vision in the earning of a livelihood; and, second, he endeavored to convince the public that the blind children of the state were capable of high intellectual attainments, that they had just as much right to a public education as their more fortunate brothers and sisters who had normal vision; that they could be made economically independent through education, and that his school was an educational institution, not an asylum. In the year prior to his new appointment there were only 97 pupils enrolled, but this was due largely to the fact that the school had never been very widely advertised to the public. Many persons in rural sections of the state were not even aware of the existence of such a school.

He found many other discouraging factors when he took up his position as superintendent. The building needed repairs, the heating service was not at all adequate, and the grounds, which had been neglected, were so rough as to be unsuited for playgrounds. The school had a standing debt of more than six thousand dollars, and the legislature had reduced the per capita allowance from $200 to $175. There was no hospital, no gymnasium, and no shop for boys' industrial work. There had been a lack of organized effort to increase the enrollment of the school, there was no prescribed course of study, and instruction was carried on in a haphazard manner. With a totally blind superintendent some persons thought this a hopeless situation.

The administrative policy which Mr. Armstrong adopted was that the blind child should be educated with as much exactness and thoroughness as the child with normal vision; that he should have access to exactly the same type of academic course as if offered in the public schools; and that the students should not consider lack of vision an insurmountable barrier to achievement. His constant aim and endeavor was to make the instruction in literary subjects so thorough that the blind pupil could pass a public school examination with seeing children of his own grade. Mr. Armstrong fully believed that the time was at hand when the visually handicapped could enjoy opportunities for extensive culture, something that the school had neglected up to that time. In his teaching Mr. Armstrong encouraged his pupils to think of themselves as normal human beings except for their lack of vision, which need be no handicap in their striving for cultural or economic achievements.

After three years under his leadership the school had changed considerably in respect to administration and equipment; the debt was paid off, the grounds graded and landscaped; a gymnasium built and equipped. The rapid growth of the institution during this brief period is illustrated by the enrollment figures which increased from 97 in 1896 to 296 in December 1900, the largest enrollment in the history of the school. Mr. Armstrong still remained director of music, despite his other duties, and increased the number of teachers in that department to six. He selected his faculty members from teachers who held degrees from some of the leading colleges, universities, and conservatories of music.

The school for colored children, located on the southeast corner of the campus, had been under the same management since its founding in 1881, but it had been considered merely temporary. Mr. Armstrong was asked by state officials to investigate the possibility of finding a more suitable location, and later they permitted him to purchase an appropriate building, using his own personal credit to complete the transaction. Persistent efforts

failed to persuade the legislative body to take over the obligation until 1921, four years after his death.

While Mr. Armstrong himself believed in compulsory education for the blind, both white and negro, he could not, of course, enforce such an idea without the support of the state law. Though that was lacking, he did succeed in improving the school to a point where those who attended received a standard education. By 1902 he had completely reorganized the school to conform to the standard graded system on the 3-5-4 plan, with subjects corresponding to the public grammar and high school curricula. In addition, the students were drilled in exactness and thoroughness to such a degree that very few of them failed to adjust themselves to the social and economic world after they finished school. He advocated certain theories in the teaching of the blind which were of great psychological importance, though at that time their value was generally discounted. For example, he believed that blind children should study music and take part in frequent recitals, not because they were especially talented but because it gave them an opportunity to walk out on the stage and appear before an audience, thus helping to overcome awkward movements which might later hinder their social adjustment. He also discriminated against the teaching of violin, believing that the instrument would do more harm than good by making street begging the "easy way" to economic independence.

One of Mr. Armstrong's greatest achievements came in 1904 when the board of trustees purchased a two-story brick building adjoining the campus on the east, to be used as a hospital. This addition made the physical plant of the school complete, but the superintendent intended it to be more than an infirmary for the isolation of contagious diseases. He secured an excellent medical staff and within the next two years fifty-three white and three colored children were sent home with their vision so greatly improved that they could attend the public schools. The following statement is taken from his report in 1904:

> "While the school is not in any sense an infirmary, and while I do not offer the treatment of the eyes as an inducement to parents to send us their afflicted children, yet with many parents, it is the best and most important thing the school has to offer. Education is a secondary consideration with them. . . ."

He did not confine the efforts of his medical staff to the school alone, but sent his doctors into poor and remote districts where the services of eye specialists were unknown.

Mr. Armstrong died on December 9, 1917, ending one of the most successful careers in the history of the education of the blind in this country. He continued his work until the last, even traveling to Halifax, Nova Scotia, in 1916 in his eighty-fourth year to be present at the convention of the American Association of Instructors of the Blind where a discussion was scheduled concerning a uniform system of type for the blind. During the twenty years he served as superintendent of the Tennessee school he succeeded in putting into effect a system of education so modern in its concepts that it remains in practice today. The school itself, unchanged since his death, still stands as a monument to the man who made it possible.

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for
Instructors of Blind Children

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